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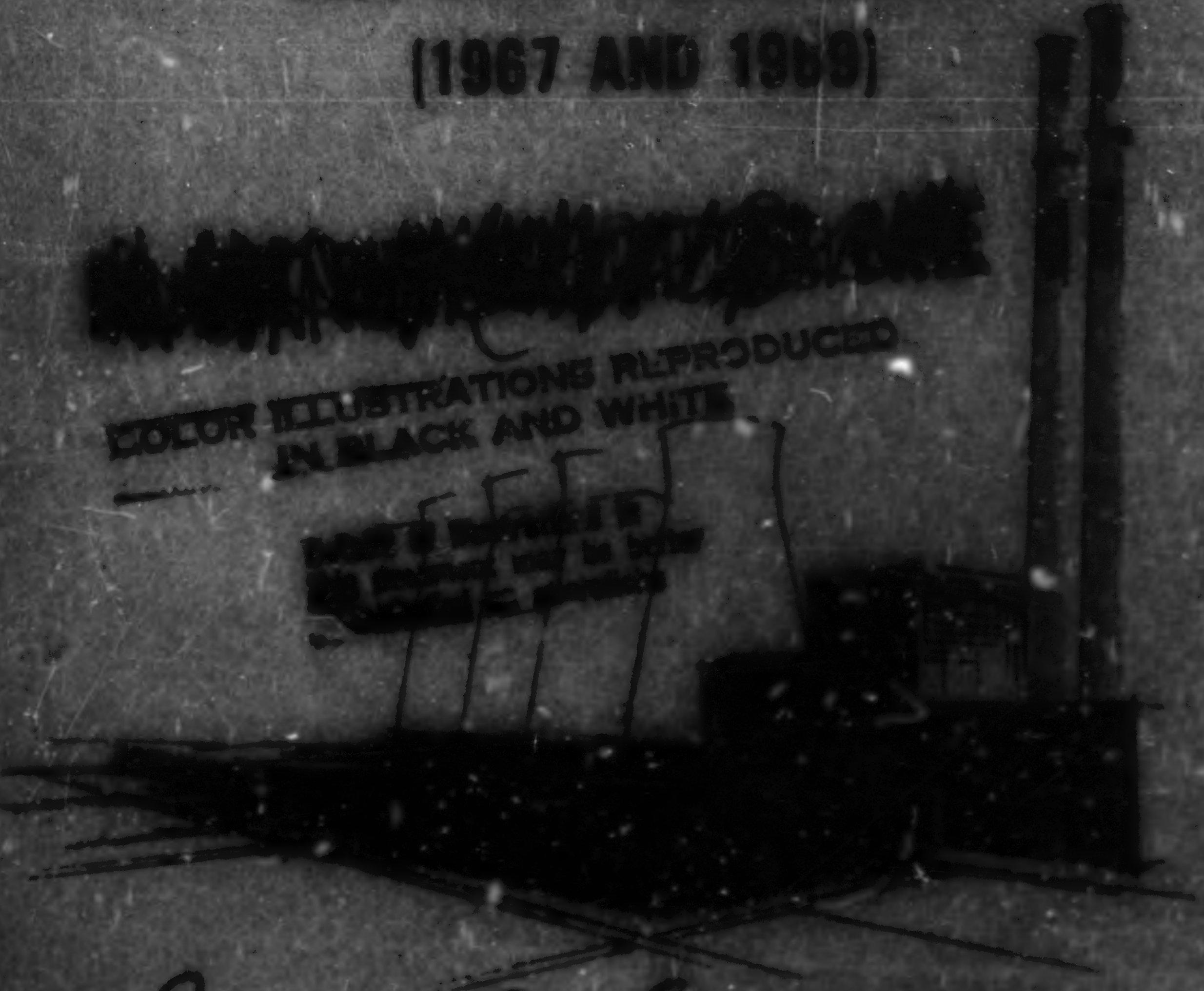
LARGE POWER PLANT EFFLUENT STUDY
(LAPPES)
VOLUME 2 - INSTRUMENTATION, PROCEDURES, AND DATA TABULATIONS
(1967 AND 1969)



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The Large Power Plant Effluent Study (LAPPES) was initiated in Western Pennsylvania to evaluate the extent and effects of air pollution resulting from the largest complex of coal-burning generating stations in the United States. During 1967 and 1969 three series of LAPPES field experiments were conducted in an area surrounding the Keystone and Homer City Generating Stations; these experiments consisted of ground-based and airborne plume measurements supported by extensive meteorological observations. The topography and climatology of the generating station complex, the sulfur dioxide and meteorological monitoring equipment, and experimental procedures are described. Plant operational parameters and air quality and meteorological data collected during 1967 and 1969 are tabulated.

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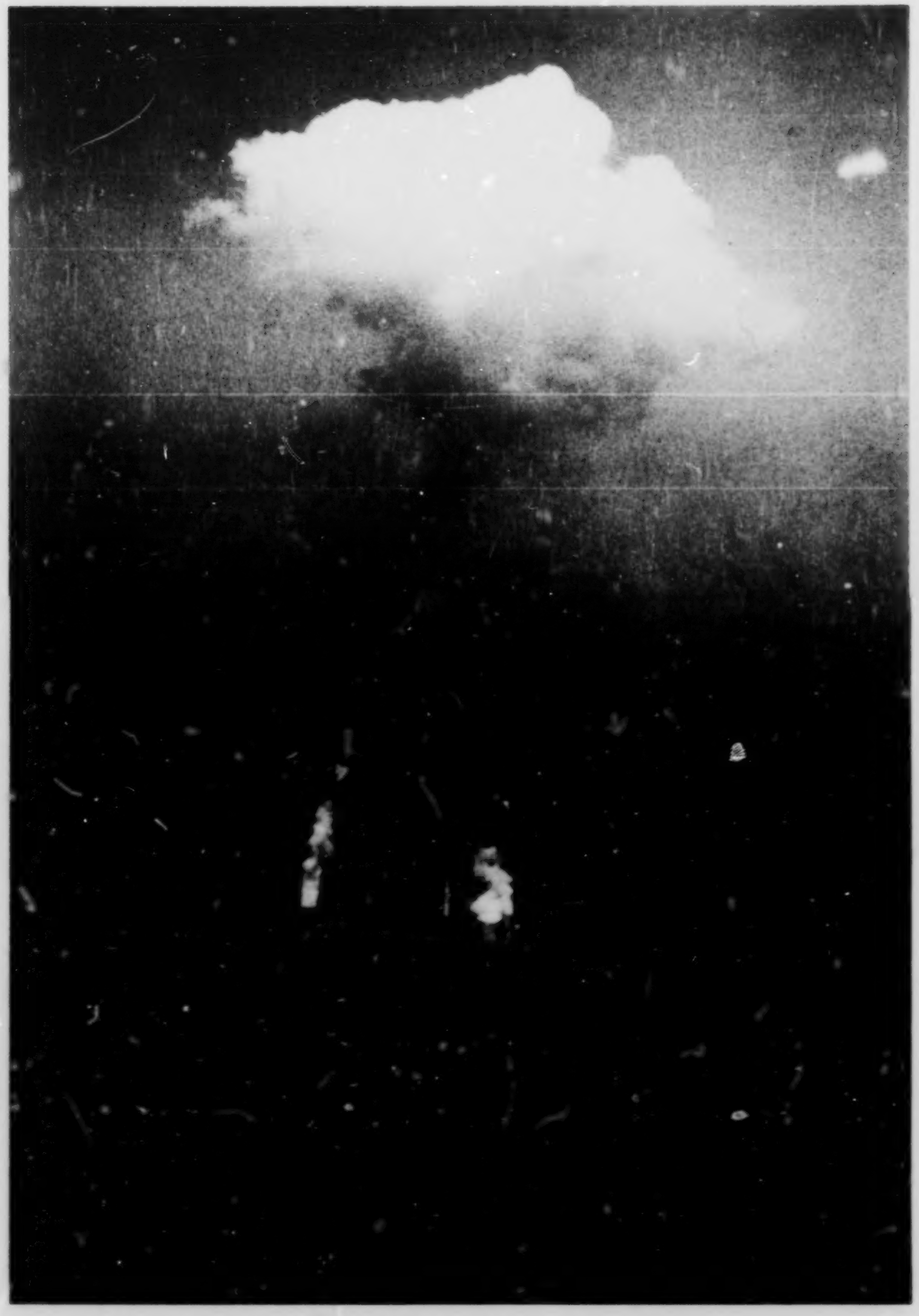

Plate 1. Keystone plume, May 1, 1969, 1006 EST.

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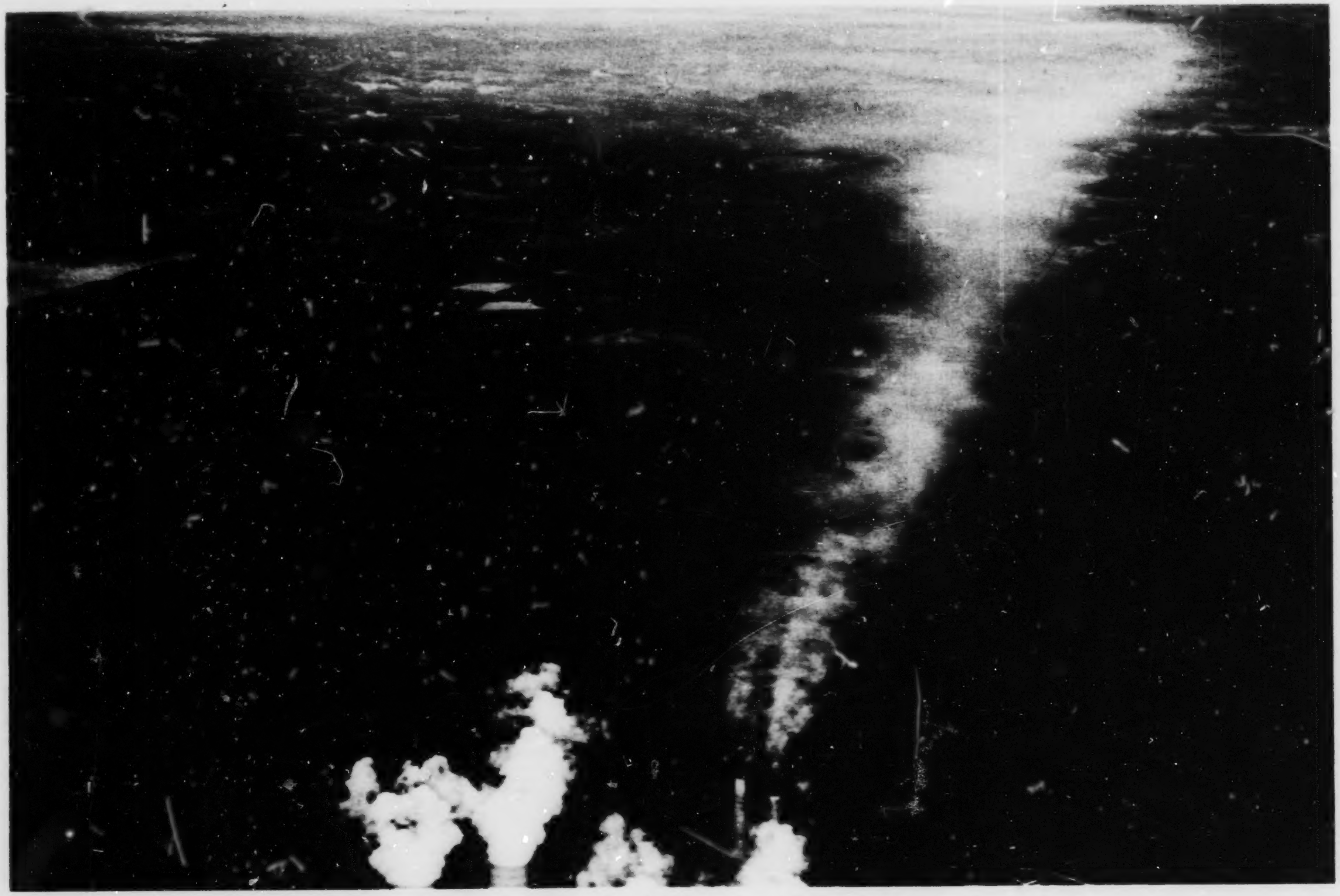

Plate 2. Keystone plume, May 5, 1969, 0600 EST.

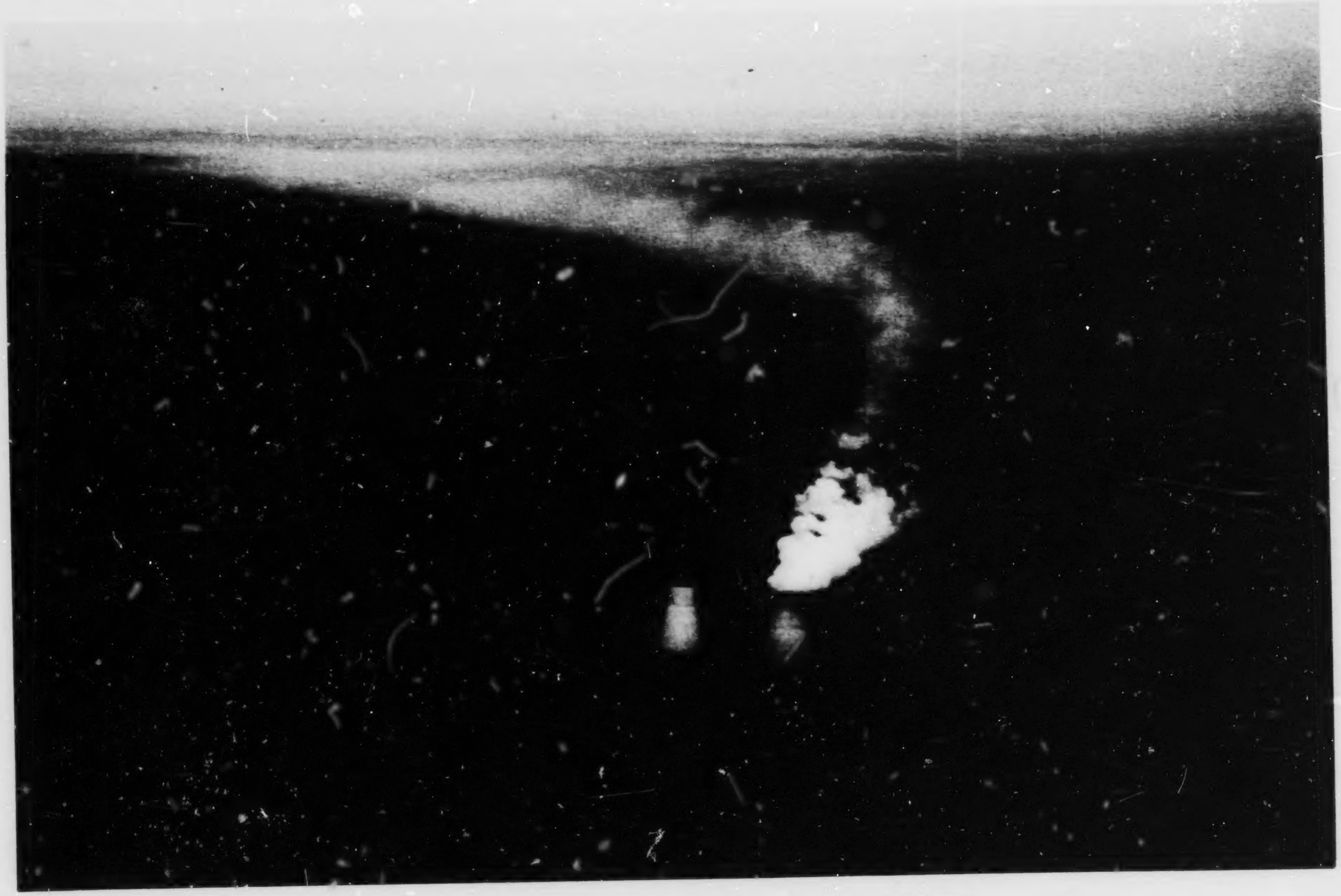

Plate 3. Homer City plume, October 24, 1969, 0650 EST.

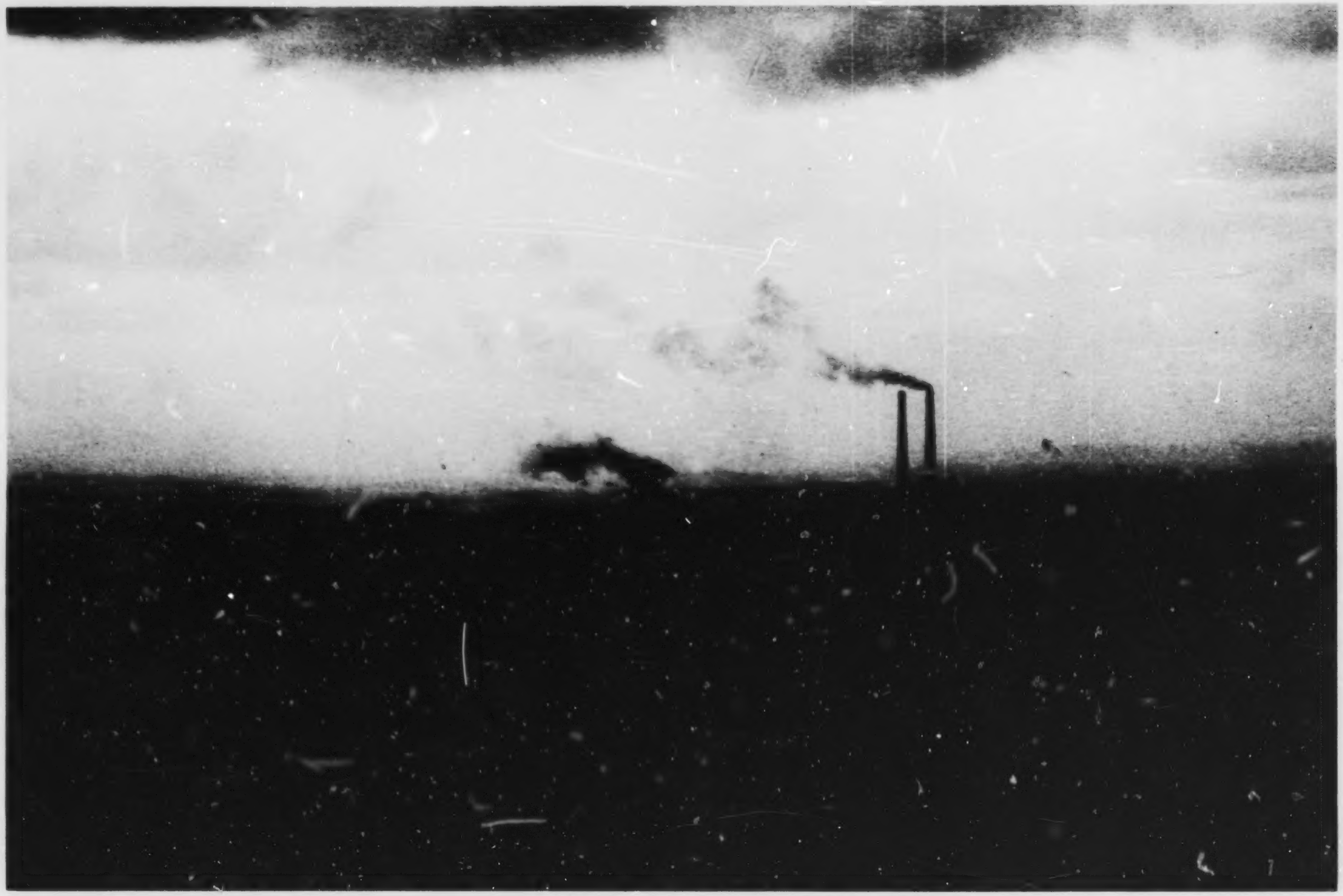

Plate 4. Homer City plume, October 17, 1969, 1000 EST.

LARGE POWER PLANT EFFLUENT STUDY (LAPPES) VOLUME 2 – INSTRUMENTATION, PROCEDURES, AND DATA TABULATIONS (1967 AND 1969)

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Division of Meteorology

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
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ABSTRACT

The Large Power Plant Effluent Study (LAPPES) was initiated in Western Pennsylvania to evaluate the extent and effects of air pollution resulting from the largest complex of coal-burning generating stations in the United States. During 1967 and 1969 three series of LAPPES field experiments were conducted in an area surrounding the Keystone and Homer City Generating Stations; these experiments consisted of ground-based and airborne plume measurements supported by extensive meteorological observations. Part 1 of this volume describes the topography and climatology of the generating station complex, the sulfur dioxide and meteorological monitoring equipment, and experimental procedures. Part 2 presents tabulations of plant operational parameters and air quality and meteorological data collected during 1967 and 1969.

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LARGE POWER PLANT EFFLUENT STUDY (LAPPES) VOLUME 2 – INSTRUMENTATION, PROCEDURES, AND DATA TABULATIONS (1967 AND 1969)

INTRODUCTION

Cognizant of the need for clean air, the electric power industry in many instances has adopted the tall stack in its endeavor to maintain reasonable air quality at ground level surrounding generating stations of ever increasing capacity. Considerable debate is underway, however, on both the national and international scene regarding the effectiveness and performance of these stacks in overall pollution management.[1-3] Questions raised by health and air pollution control agencies regarding the potential effects of airborne effluents from these plants cannot be answered in a definitive way by simply extrapolating experience with existing smaller capacity installations. Accordingly, the National Air Pollution Control Administration (NAPCA) is conducting a 5-year comprehensive field study to determine the extent and effects of power plant emissions from tall stacks. Specifically, three objectives are being pursued at the Western Pennsylvania site:

1. To develop and validate transport and diffusion models with which to calculate ground-level concentrations of effluents from large power plants with tall stacks.
2. To measure the magnitude, frequency, and spatial distribution of ground-level concentrations from large power plants with tall stacks, singly and in combination, and to compare the observed data with calculated predictions.
3. To evaluate the effects of sulfur compounds and other effluents from a large power plant complex on vegetation in the region of the installations.

The LAPPES Project is sponsored by the National Air Pollution Control Administration with field activities conducted by on-site personnel. Office facilities are maintained at Jimmy Stewart Airport in Indiana, Pennsylvania. Also cooperating in the study are the Pennsylvania Electric Company and the Division of Air Pollution Control of the Pennsylvania State Department of Health. During the 1967 and 1969 field experiments, additional contract and voluntary participation was provided by Battelle Northwest, Illinois Institute of Technology Research Institute, and Brookhaven National Laboratory.

LAPPES consists of two complementary efforts, the first concerned with meteorological and air quality measurements and the second with agricultural effects data. The meteorological portion of the study is conducted along three interrelated lines of investigation: (1) determination of plume rise under a variety of atmospheric conditions; (2) determination of plume dispersion, both vertical and horizontal, as a function of downwind distance and atmospheric conditions; (3) determination of the magnitude, areal extent, and occurrence frequency of sulfur dioxide concentrations at ground level after emission from tall stacks. The agricultural segment of LAPPES will attempt to evaluate effects of power plant emissions on the agricultural economy of the adjacent region, which consists largely of Christmas tree plantations.

The purpose of this volume is to present the meteorological and air quality data collected during 1967 and 1969 in support of the first two LAPPES objectives. Specifically, Part 1 will describe the power station complex and the equipment, procedures, and techniques used in conducting field experiments, in measuring air quality and meteorological parameters, and in reducing and processing data. Part 2 will present tabulations of the basic data and pertinent supplementary data.

This volume is not intended to present analyses of the data, to evaluate existing plume rise and dispersion theories, or to develop new diffusion models; these objectives will be covered in future volumes. Previous publications dealing with LAPPES include a general description of the project goals and activities[4] and a summary of data collected during four similar experimental series conducted around the Keystone Generating Station in 1968.[5] Preliminary reports have been received from two LAPPES subcontractors who participated during 1969.[6,7]

PART 1 – INSTRUMENTATION AND PROCEDURES

POWER PLANT DESCRIPTION

The largest complex of coal-burning generating stations in the United States is presently emerging in the Chestnut Ridge area of Western Pennsylvania shown in Figure 1. Three new mine-mouth stations, Keystone, Homer City, and Conemaugh, are located approximately equidistant along a NW-SE line 39 kilometers long about 80 kilometers ENE of Pittsburgh. These three plants, combined with the nearby Seward and Shawville Stations, form a complex whose total annual production of 47,380,505 megawatt-hours exceeds the total yearly electrical output of all but 11 nations of the world. The five stations, owned by a total of 12 electric utilities, are fed from coal mines located either directly under or close by the station sites.

The subject of LAPPES is the line of sources formed by the Keystone, Homer City, and Conemaugh Stations, whose stacks will emit a combined daily output exceeding 2000 metric tons of sulfur dioxide into the atmosphere. A distinct advantage of this location for the study is that air quality measurements can progress as each stack of each station becomes operational. The 1967 and 1969 LAPPES field studies were conducted in the area surrounding Keystone and Homer City. In subsequent phases the project area will be extended to include the Conemaugh Station, now under construction.

Keystone Station

The Keystone Generating Station, located just west of Shelocta, was first of the three new mine-mouth stations to be completed (Figure 2). The station has an hourly generating capacity of 1.55×10^{12} calories (1800 megawatts) produced by two identical cross-compound turbine-generator units. The boilers, which hourly produce 1.81×10^{12} calories, consume 590 metric tons of pulverized coal per hour, supplied by conveyor and truck from nearby mines. Four 99-meter-tall natural-draft cooling towers are used to provide recirculating water for steam condensation. The towers are designed to collectively cool 21.2×10^5 liters of water per minute from 48°C to 32°C with a total evaporation rate of 34,000 to 49,000 liters per minute.

Boiler effluent is fed to the 244-meter-tall stacks after passing through two electrostatic precipitators per unit. The precipitators, with an efficiency rating of 99.5%, remove a combined total of 83 metric tons of flyash hourly. Each stack includes a 9.5-mm-thick steel liner that maintains a constant outside diameter of 11.0 meters from the base to a height of 27 meters and 8.3 meters from a height of 58 meters to stack top; the taper from 11.0 to 8.3 meters occurs between 27 and 58 meters above base. Surrounding the liner is a concrete shell tapering from an outside base diameter of 20.4 meters to 10.4 meters at the top. Separation between stack centers is 61.9 meters and the inside (exit) diameter at the top is 8.29 meters.

Orientation of the stacks is along a line 044°-224° from north.

Unit #1 of the Keystone Station went into commercial operation during August 1967; unit #2 followed in July 1968.[8,9]

Homer City Station

Second in line is the Homer City Station, which is located about 4 kilometers SSW of the Homer City Borough (Figure 3). The station is capable of generating 1.10×10^{12} calories hourly (1280 megawatts) by means of two tandem-compound turbine-generator units. The boilers, which hourly produce 1.28×10^{12} calories, consume 420 metric tons of finely ground coal per hour, supplied by conveyor from two nearby mines. Two 119-meter-tall natural-draft cooling towers provide recirculating water to condense the steam back into boiler water. Approximately 7.9×10^5 liters of water are cooled from 49°C to 32°C each minute; total evaporation rate is 15,000 to 21,000 liters per minute.

Boiler effluent reaches the two 244-meter-tall stacks after passing through four electrostatic precipitators that remove a total of 71 metric tons of flyash hourly. Each chimney includes a 6.35-mm-thick steel liner that tapers from 10.0 meters outside diameter at the base to 7.3 meters at a height of 55 meters; the top 189 meters of the liner maintains a constant outside diameter of 7.3 meters. Surrounding the liner is a concrete shell tapering from an outside base diameter of 19.1 meters to 9.5 meters at the top. Separation between stack centers is 53.0 meters and the inside (exit) diameter at the top is 7.29 meters. Orientation of the stacks is along a line 160°-340° from north.

The Homer City Station is so designed that a third unit with associated stack and cooling tower may be added if required. Unit #1 went into commercial operation during July 1969; unit #2 followed in December 1969.[9]

Conemaugh Station

The third new generating station, Conemaugh, is situated at the village of Huff on the Conemaugh River. The Conemaugh Station is the near twin of Keystone, with identical boiler production and coal consumption. Also similar is the hourly generating capacity of 1.55×10^{12} calories (1800 megawatts). Because of the more abundant water supply, however, Conemaugh requires only two cooling towers, each 113 meters tall. Approximately 10.6×10^5 liters of water are cooled from 48°C to 32°C each minute to provide recirculating water for steam condensation; total evaporation rate is 17,000 to 25,000 liters per minute.

The Conemaugh Station is similarly equipped with precipitators that will ensure removal of up to 100 metric tons of flyash hourly from the boiler effluent. The two 305-meter stacks are constructed of a 22.2-mm-thick steel liner encased in a tapered concrete shell ranging from an outside base diameter of 25.3 meters to a top diameter of 10.3 meters. The steel liner maintains a constant diameter of 11.0 meters from the base up to a height of 27 meters and 8.3 meters from a height of 58 meters to stack top. The taper from 11.0 to 8.3 meters occurs between 27 and 58 meters above base. Separation between stack centers is 61.9 meters and the inside (exit) diameter at the top is 8.29 meters. Orientation of the stacks is along a line 101°-281° from north.

Unit #1 of the Conemaugh Station went into commercial operation during May 1970; unit #2 is scheduled to follow in February 1971.[9]

TOPOGRAPHY AND GENERAL CLIMATOLOGY

As shown by the topographic map in Figure 4, the generating stations are located in the Chestnut Ridge sector of the Allegheny Mountains. Typical of this area of Pennsylvania are numerous creeks and rivers, and rolling hills rising 100 to 200 meters above the valley floors. The land has a general upward slope to the east that forms the foothills of the Allegheny Mountains. Prominent features include the Chestnut Ridge, oriented NE-SW and situated between the Homer City and Conemaugh Stations, and the considerably higher Laurel Ridge immediately southeast of Conemaugh.

The Keystone Station is situated in a shallow rural valley with the stack base at 305 meters MSL. Except for this valley, the surrounding terrain within 5 km is hilly, with the highest peak reaching no more than mid-stack height. The Homer City Station is located on a plateau, with much of the surrounding terrain lower than the stack base at 366 meters MSL. The highest peaks within 5 km are those of Chestnut Ridge to the SE, which range slightly higher than mid-stack. The station most susceptible to terrain influences will probably be Conemaugh. Separating this plant from Johnstown is Laurel Ridge, which has some peaks reaching 150 meters above stack top. These hills along with Chestnut Ridge to the west may cause channeling of the plume. The stack base elevation at Conemaugh is 329 meters MSL.

The area of study has a humid continental type of climate modified slightly by its nearness to the Atlantic Seaboard and the Great Lakes. Summers are mild but frequently humid because of invasions of air from the Gulf of Mexico. Winters are reasonably brisk with occasional periods of extreme cold; spring and fall months have moderate to cool temperatures. Precipitation is well distributed throughout the year, with appreciable snowfall in winter and the maximum frequency of thunderstorms in early summer.

Surface inversions are relatively frequent during the warmer months of the year; in winter, however, cloudiness persists because of this area's proximity to the track of west-east migratory storms and the frequent showery weather associated with NW winds across the Great Lakes. Cold air drainage induced by the many hills leads to the frequent formation of early morning fog, which may be quite persistent in the deeper valleys during the colder months. The study area is also subject to relatively frequent occurrences of stagnating anticyclones, a condition conducive to high ambient pollution levels because of the resulting poor ventilation.

HELICOPTER INSTRUMENTATION *

The primary source of airborne plume and meteorological measurements was an instrumented Bell Model 47J2 helicopter. The instrument package was designed and fabricated by Sign X Laboratories of Essex, Connecticut, and provided the observer with continuous, near-instantaneous measurements of sulfur dioxide and pressure height on the top recorder, and temperature and wet-bulb depression on the bottom (Figure 5). A description of the system follows:

1. Sulfur dioxide: electroconductivity method with time constant of 2.0 to 2.5 seconds; four ranges with full scale 1.0, 5.0, 10.0 or 50.0 ppm; flow rate of air sample, 2500 cc/min; flow rate of reagent, 25 cc/min; temperature compensation in analytical cell of 2.0 percent per degree C based on 25°C; sulfur dioxide removal from reagent accomplished by ion exchange resin.[10]
2. Pressure height: double bourdon cell with time constant of 0.1 second; electrical output a linear function of pressure height according to standard atmosphere; four overlapping scales with 200 meters = 25.4 mm (1.0 inch) on chart.
3. Temperature: thermistor with time constant of 0.1 to 0.2 second; three overlapping scales with 4°C = 25.4 mm (1.0 inch) on chart.
4. Wet-bulb depression: thirty-junction thermopile with time constant of 0.1 to 0.2 second; one scale with 4°C = 25.4 mm (1.0 inch) on chart.
5. Sulfur dioxide scrubber: manually operated, water- and resin-activated; two identical inline tubes provide equivalent pressure drop whether scrubbing or sampling directly.
6. Recorders: Hewlitt-Packard Model 7100B; two-channel with plug-in modules; full scale for each pen equivalent to half chart width with 2.54-mm-pen displacement to prevent collision; one minute marker and one event marker on each recorder; chart speed = 25.4 mm (1.0 inch) per minute.

The instrument package was mounted in the left passenger cockpit position, facing the observer, so that continuous monitoring of all four parameters could be maintained (Figure 6). Power was supplied by the aircraft's 24-volt DC power supply, subsequently converted to 115 volts AC by means of a Topaz static inverter contained in the baggage compartment.

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*Mention of commercial products or company names does not constitute endorsement by the National Air Pollution Control Administration or the U.S. Department of Health, Education, and Welfare.

The pressure-height sensor, attached to the lower right brace of the instrument package, was connected by means of Teflon tubing to the static line of the helicopter airspeed indicator. The remaining three sensors were externally mounted on the left skid (Figure 7). The temperature and wet-bulb depression sensors were located respectively fore and aft in the 75-mm-diameter cylinder, with the reservoir for the wet bulb occupying approximately one-fourth the inner volume. The air intake to the SO_2 analyzer was a 3.175-mm-interior-diameter (ID) Teflon tube inserted into the trailing edge of the 1.8-meter-long, 22.2-mm-ID pipe attached to the skid.

With an airflow of 2500 cc/min into the analyzer and a Teflon orifice in the probe of 1.19 mm ID, the isokinetic sampling speed for this unit was calculated as 24.3 mps. Actual flights were initially conducted at 17.9 mps (40 mph) and later changed to 22.4 mps (50 mph). Interference by downwash from the helicopter rotor occurs only when the craft is hovering and not during forward flight.

SULFUR DIOXIDE INSTRUMENTATION

Portable Bubblers

The portable bubblers used to measure ground-level SO_2 concentration under the plume were constructed by NAPCA personnel and designed to obtain six consecutive 30-minute samples (Figure 8). The units are powered by 7.5-volt batteries and maintain an average flow rate of 150 cc/min. Each of the six sampling tubes per bubbler contains 20 ml of West-Gaeke solution through which ambient air is drawn by a 6-volt motor driving a 200-cc/min-capacity pump. Additional tubes containing glass wool are installed downstream to prevent moisture from entering the pump assembly.

Switching between sampling tubes is accomplished by means of a synchronous timing motor and sequential valve. Because the sampling probe is only 15 cm above ground when operating, millipore filters are inserted near the inlets to prevent admission of particulate matter. Analysis of bubbler samples is performed on a Technicon AutoAnalyzer.

Technicon AutoAnalyzer

The LAPPES office at Jimmy Stewart Airport is equipped with a Technicon AutoAnalyzer that serves the dual purpose of analyzing bubbler samples and monitoring ambient SO_2 (Figure 9). The SO_2 is measured colorimetrically, using West-Gaeke solution as the absorbing reagent, with sulfamic acid added to depress interference from nitrogen dioxide. Components of the AutoAnalyzer include a sampler, proportioning pump, heating bath, programmer, and colorimeter-recorder.

When this instrument is used for on-stream monitoring, the flow rates of air and West-Gaeke solution through the absorbing column are 1 liter/min and 1.5 cc/min respectively. Ambient air is drawn through Teflon tubing from the intake on the office roof, 12 meters above surface; a Millipore filter is used to screen out airborne particulate matter. When the instrument is used to analyze bubbler samples, the intake line from the absorbing column is switched to the sampler turntable where bubbler reagent is contained in individual sample cups.

The transmittance of the colored complex is measured at 572 mμ with a 50-mm flow cell in the colorimeter. Calibration curves for data reduction are computed by analyzing standards each time new reagents are prepared.[11]

METEOROLOGICAL INSTRUMENTATION

Fixed Network at Jimmy Stewart Airport

Several meteorological variables are routinely monitored at Jimmy Stewart Airport to provide supplementary data for LAPPES experiments; these include wind speed and direction, temperature, relative humidity, hourly precipitation, and solar radiation (Figure 10). The surface elevation for these observations is 427 meters MSL, which is exactly mid-stack height of the Keystone Generating Station.

The Aerovane wind transmitter is mounted on a 10-meter tower as shown in Figure 10. Because of a nearby active runway, the FAA required that the tower be erected within 25 meters of the two-story office building. Winds from the quadrant centered on 090° may be affected by the obstruction and should be so regarded in the ensuing data summary.

The Aerovane is equipped with a six-bladed impeller whose starting speed is about 0.7 mps; wind direction is sensed by the streamlined vane. Values for the wind speed and direction are electrically transmitted and recorded continuously on a two-channel recorder. Range of wind speed is 0 to 44.7 mps (0 to 100 mph) on one channel; range of wind direction is 540 degrees of azimuth, allowing for crossover, on the other channel. Speed of chart rotation is 76.2 mm (3.0 inches) per hour.

Hourly temperature and relative humidity values were obtained from a standard U. S. Weather Bureau hygrothermograph positioned in a louvered "cotton-region type" shelter. Maximum and minimum thermometers and a sling psychrometer were used to maintain quality control on the hygrothermograph. Precipitation totals were obtained from a weighing-bucket rain gage with verification provided by a standard 20.32-cm (8-inch) gage.

An Eppley pyranometer provided hourly values of total sun and sky radiation. Measurements are produced as a result of a voltage difference between two exposed concentric rings, one painted with lampblack, the other smoked with magnesium oxide. A continuous record was maintained by means of a Leeds and Northrup Speedomax H recorder. Full pen displacement is equivalent to 2 langleys per minute while the speed of chart rotation is 50.8 mm (2.0 inches) per hour.

Special Observations

Radiosonde Releases - In support of the airborne plume and meteorological measurements, free radiosondes were released twice daily during selected experimental periods from Jimmy Stewart Airport. A 100-gram pilot balloon inflated to about 1100 grams carried the 403-megacycle package aloft at a rate of about 300 meters/min (Figure 11). Transmissions of temperature and humidity were recorded on a 403-megacycle receiver using a fixed dipole antenna while visual tracking by theodolite provided winds aloft data (rabal). Both receiver and theodolite monitoring were terminated at 700 millibars.

Pilot-Ballon Ascents - Winds aloft were measured during experiments at the Keystone and Homer City Stations by double-theodolite observations of pilot balloons. Inflation of 30-gram balloons to about 45 grams provided an average ascension rate of 130 meters/min. Except when obscured by steam or smoke plumes, the azimuth and elevation angles were read at 30-second intervals for a period of 10 minutes.

OPERATING PROCEDURES FOR LAPPES EXPERIMENTS

Airborne measurements of the Keystone and Homer City plumes during 1967 and 1969 were obtained during three separate flight periods designated as the October 1967, April 1969, and October 1969 series respectively. Unless prevented by plant shutdown, helicopter malfunction, or adverse weather, helicopter flights were conducted every day during these periods. Adverse weather for this type of experiment included ceilings lower than the plume, excessive ground fog, or winds too strong to permit takeoff; rain or snow alone did not curtail the flights. In order to permit visual observation of the plume, Pennsylvania Electric Company personnel reduced precipitator efficiency to allow limited flyash release during periods in which experiments were conducted.

Usually two flights, each lasting about 150 minutes, were made on a series day. The first commenced at dawn while the plume was normally isolated from the ground by stable atmospheric layers near the surface. This flight consisted of three cross sections preceded and followed by a 1000-meter vertical temperature profile just upwind of the Keystone or Homer City stacks. The cross sections were made at 4-, 10-, and 16-km arcs downwind (4.8, 10, and 16 km during the October 1967 series) and consisted of successive crosswind flights through the plume at 60-meter vertical intervals; occasionally 30-meter intervals were flown to better define the top and bottom edges. The first traverse of each cross section was made approximately midway between top and bottom, with successively higher traverses until the top was reached; then lower from the center until the bottom was reached. In some cases this procedure was reversed so that the lower half of the plume was flown first. By maintaining a constant forward speed of 50 mph (40 mph during October 1967 series) and by indicating surface reference points during plume passage, the geometry of the plume may be reconstructed.

The second flight of a series day began simultaneously with the normal temperature transition during which the layer in which the plume was imbedded was brought to the ground. In addition to obtaining two or three more temperature profiles, the helicopter was flown parallel and normal to the plume's longitudinal axis near the surface to obtain the x and y dimensions of ground-level SO_2 concentrations. This treetop-level flight was usually continued as long as fuel permitted unless the ground-level concentrations originating from the plume terminated sooner. Occasionally a third flight was executed during the afternoon to measure the effects of a looping plume or the sustained downwash from a limited mixing-layer regime. If no ground-level concentrations occurred on a particular day, the second flight was sometimes used to repeat one or more cross sections. All plume cross section and crosswind ground-level traverses were flown in the shape of arcs centered on the Keystone or Homer City stacks.

Helicopter measurements of ground-level concentrations were complemented with a series of consecutive 30-minute samples made by six to ten bubblers on the ground beneath the plume. Placement of these portable units was dependent on helicopter location of the plume aloft and usually spanned the expected lateral projection, to the ground, of the plume aloft, ranging from near the plant to as far out as 21 km. On days of drastic plume shift as determined from helicopter observation prior to inversion breakup, the bubblers that had already been set out were not analyzed when it was obvious they were not influenced by the plume.

Prior to and after the daily airborne operations, radiosondes were released at Jimmy Stewart Airport. Although detailed helicopter temperature measurements revealed the stability through the plume's vertical extent, the radiosondes detected such other pertinent features as subsidence inversions aloft. In addition, these releases will provide a means of comparing the climatology of Pittsburgh with that of the immediate area. Between these two releases, double-theodolite pibals were taken every 30 minutes at the Keystone or Homer City Station to provide wind data directly affecting plume dispersion.

SELECTED PLUME PHOTOGRAPHS

To assist in the physical interpretation of data contained in Part 2 of this volume, four selected plume photographs are presented in Plates 1 through 4. Vertical stability and wind data for these cases may be found in Tables 8, 9, and 10 while dimensions of the plumes are depicted in Table 3. In all four photographs, a visible plume was produced by means of intentional limited flyash emission.

Plate 1 illustrates the diffusion of the Keystone plume under extremely light wind speeds and a neutral lapse rate. The resultant ground-level SO_2 concentrations from the plume at 4 km covered an arc of about 135° around the stacks; similar patterns were found at 10 and 16 km. Additional moisture from the four cooling towers was responsible for the accelerated cumulus formation; by 1030 EST, a uniform scattered deck of cumulus had formed over the area.

Plate 2 presents an example of a fanning plume at the Keystone Station. The plume's entire vertical extent was contained in a stable layer, with the top of the plume coinciding with the top of the inversion at about 450 meters. The initial veering, followed by backing of the wind direction with height through this layer, is reflected in the plume cross sections. Another example of plume stability is illustrated in Plate 3. A combination of inversion and isothermal layers was responsible for the limited vertical extent of the Homer City plume. In contrast to the preceding example, this plume was subjected to a backing wind direction below and veering above; the cross sections in Table 3 illustrate this change in direction with height.

An example of plume behavior under high wind speeds and neutral stability is depicted by the Homer City plume shown in Plate 4. Two cross sections were attempted but the top of the 10-km cross section is incomplete because of strong turbulence over Chestnut Ridge.

CONTRACT AND VOLUNTARY PARTICIPATION IN LAPPES PROJECT

In addition to observations made by NAPCA personnel, two subcontractors and one voluntary participant in the LAPPES Project during 1969 provided data of interest. As a voluntary participant, Brookhaven National Laboratory used a fixed-wing aircraft to collect Keystone plume samples for isotopic analysis. The S_{32}/S_{34} ratio in these samples was compared to the corresponding ratio in the supply coal in an attempt to establish a correlation.

Under contract to NAPCA, personnel from the Pacific Northwest Laboratories of Battelle Memorial Institute collected and analyzed rainfall samples under the Keystone plume during the October 1969 LAPPES series. The purpose of the field operations was to determine the scavenging efficiency by natural precipitation of airborne contaminants and to identify the chemical composition of surface-collected rainfall. Precipitation samples were obtained by arranging collectors in two arcs under the plume at approximate distances of 2 and 4 km. Subsequent laboratory analyses of the samples yielded measurements of acidity and various sulfur and nitrogen compounds. Supplementary data obtained during the experiments included airborne and surface SO_2, and particulate measurements upwind and in the plume; rainfall rate and raindrop size and electric charge spectra; adsorption of SO_2 on flyash collected by means of an electrostatic precipitator; and vertical profiles of wind speed and direction, temperature, and humidity. Since additional field operations consisting of snowfall and rainfall collection periods will be conducted during 1970, only preliminary results have been summarized at this time.[6,12]

Also under contract to NAPCA, personnel from the Illinois Institute of Technology Research Institute conducted a two-phase study of cooling-tower plumes at the Keystone Generating Station. The purpose of the study was to describe and evaluate potential effects on the local environment, climate, and nearby power plant smoke plumes that resulted from cooling-tower emissions of water vapor and heat. During September, a ground-based survey was made in the vicinity of Keystone to evaluate the heat and water balances through the cooling towers. The airborne phase of IITRI's study was conducted from November 28 through December 6 and involved the use of an instrumented Bell Model 47J2 helicopter. Airborne measurements permitted the determination of temperature, humidity, and SO_2; size analysis of plume mist samples collected by a cascade impactor; and chemical analyses of plume mist collected by a midget sequential wet impinger. Preliminary results have been reported.[7,13]

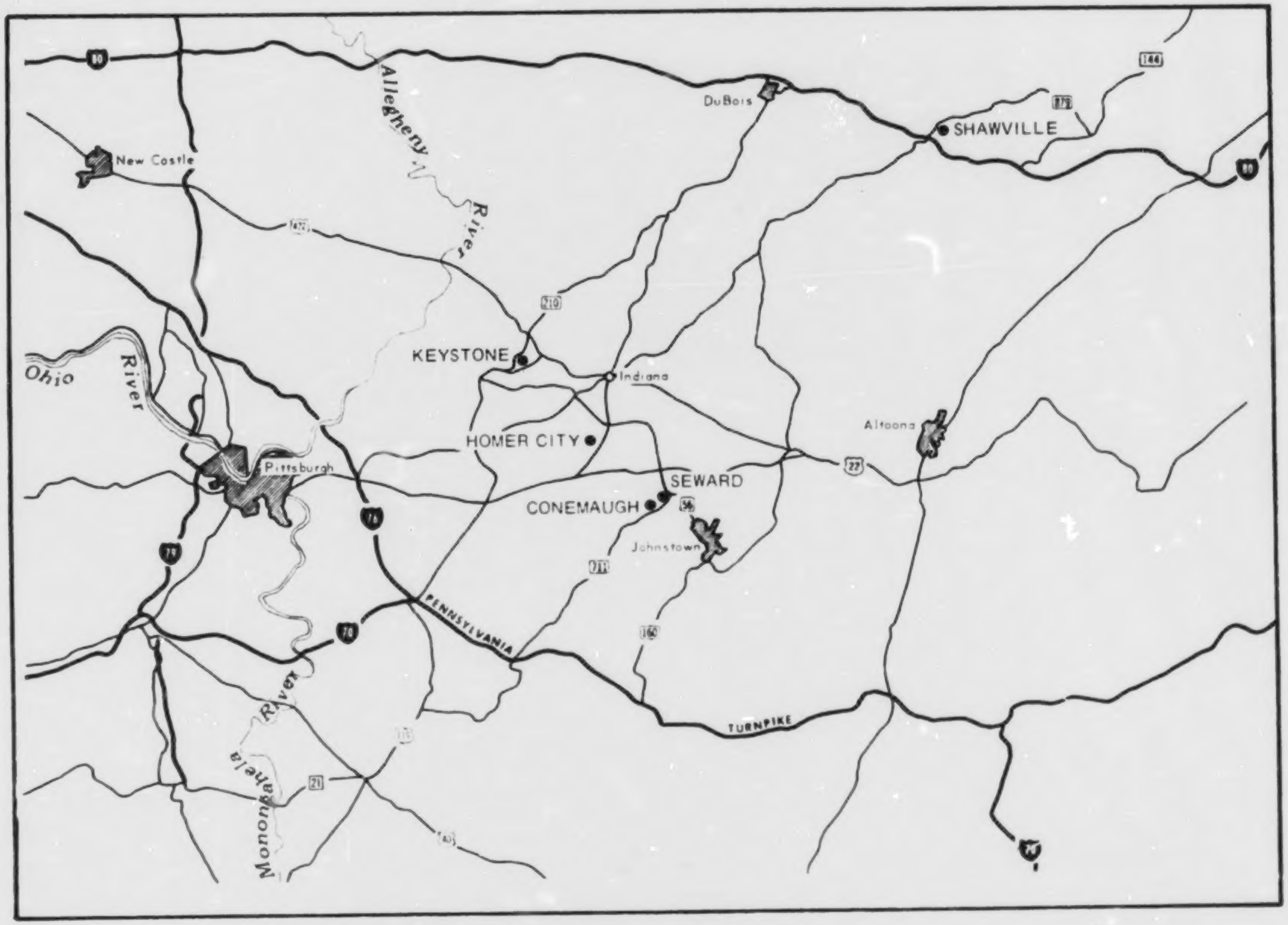
80
New Castle
Allegheny River
422
DuBois
144
879
SHAWVILLE
80
210
KEYSTONE
Indiana
Ohio River
HOMER CITY
Altoona
Pittsburgh
22
SEWARD
CONEMAUGH
56
Johnstown
76
79
711
PENNSYLVANIA
70
160
Monongahela River
21
TURNPIKE
40

Figure 1. Locations of generating stations.

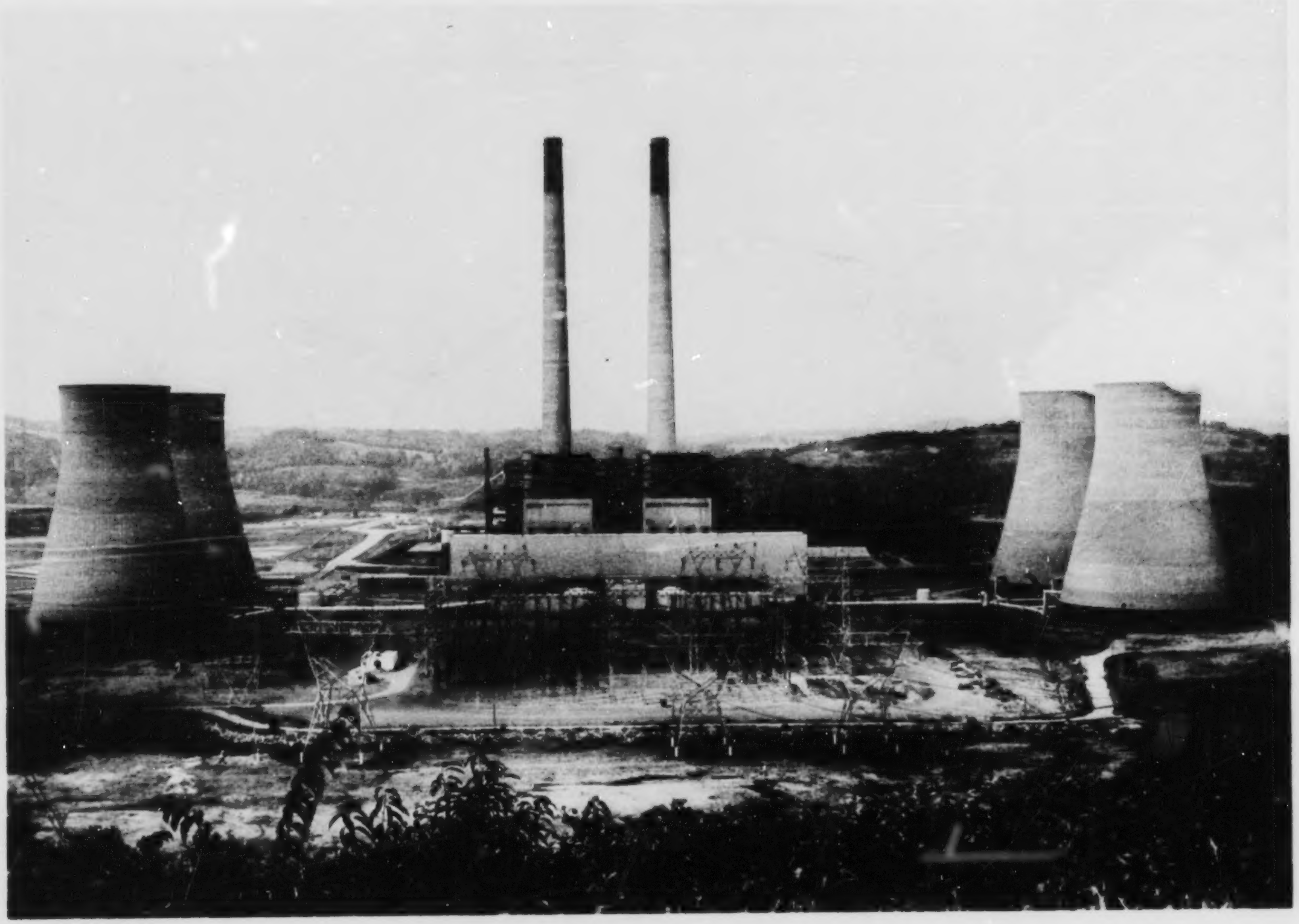

Figure 2. Keystone Generating Station.

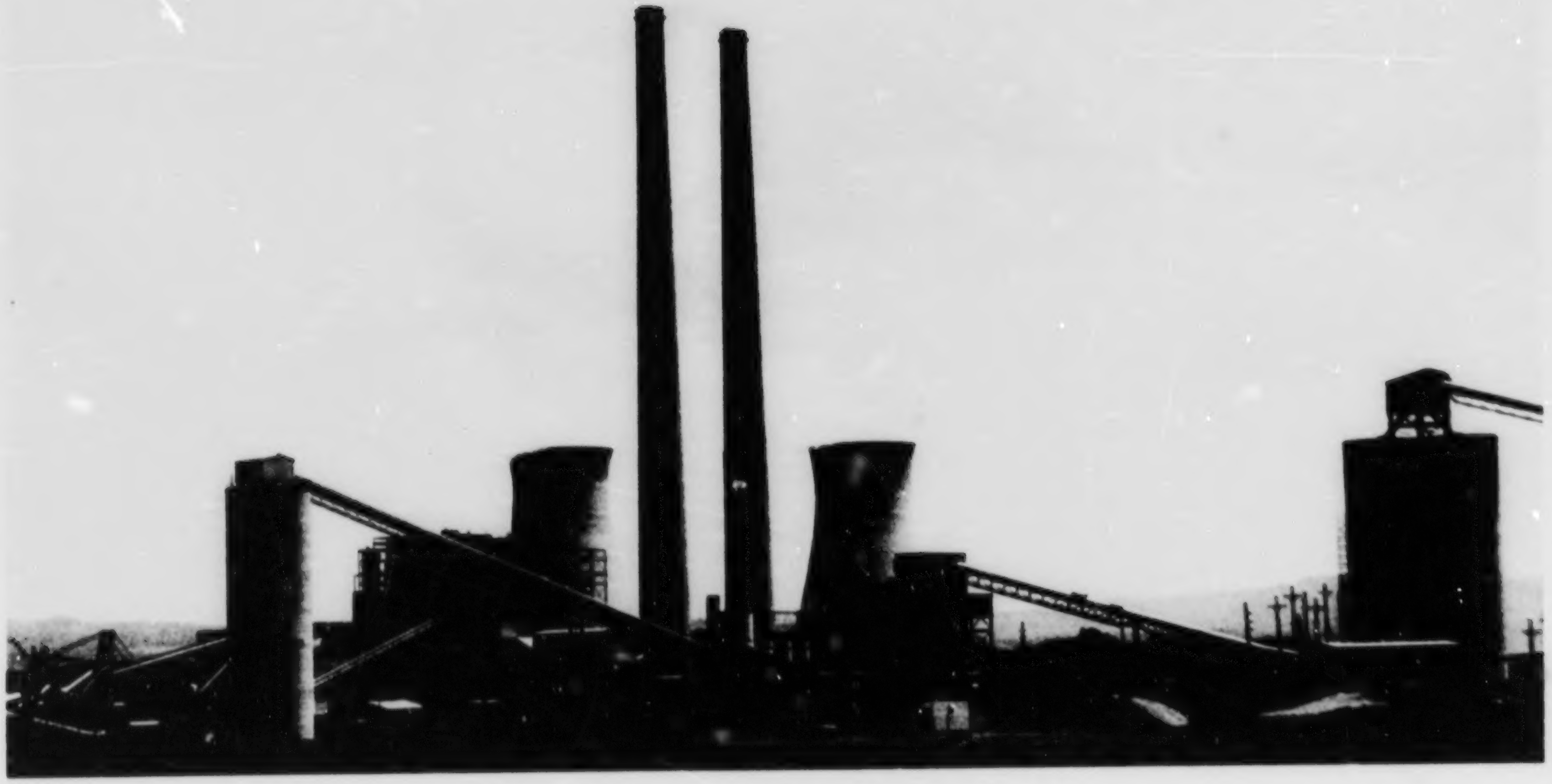

Figure 3. Homer City Generating Station.

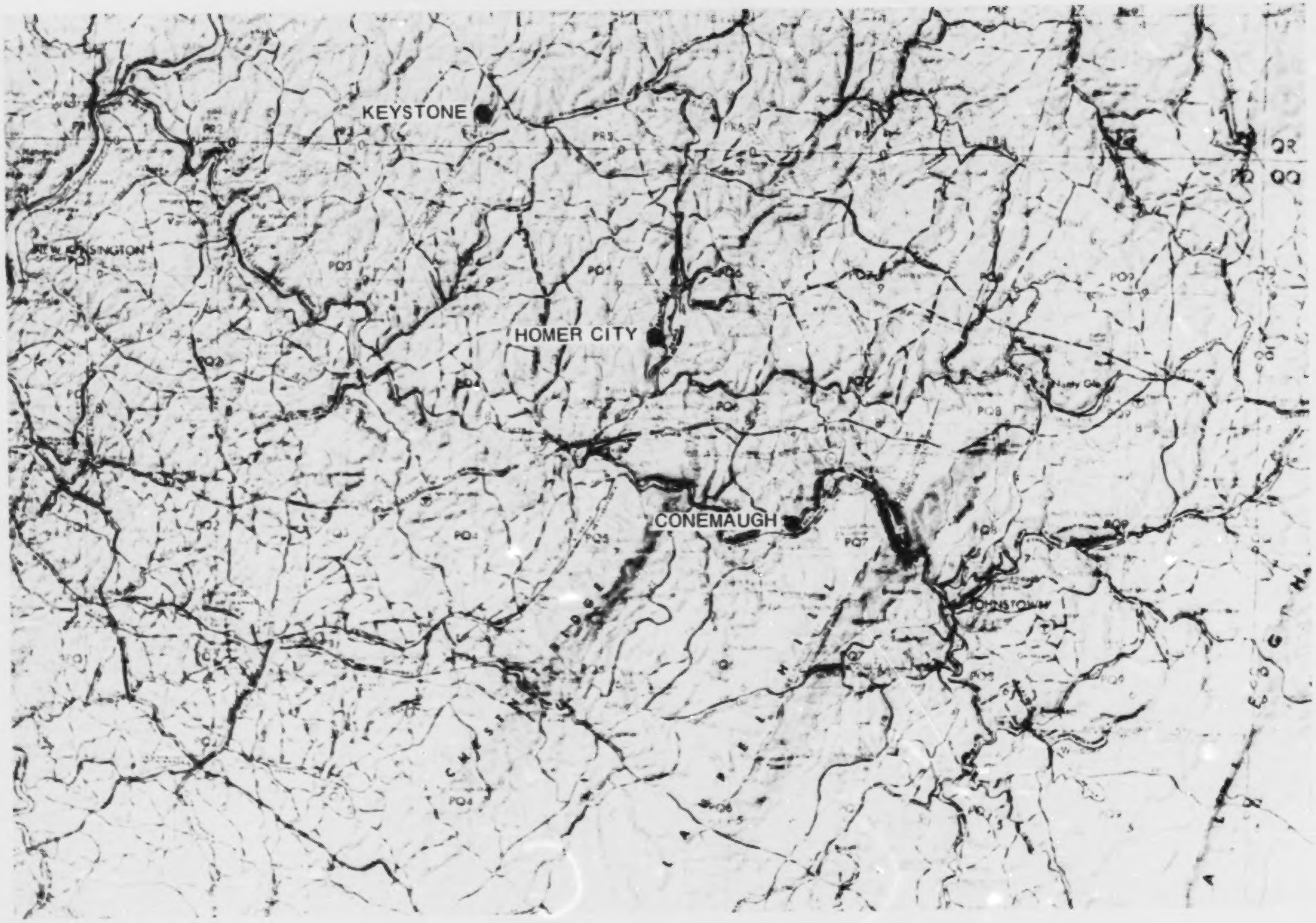
KEYSTONE
HOMER CITY
CONEMAUGH

Figure 4. Topography of generating station complex.

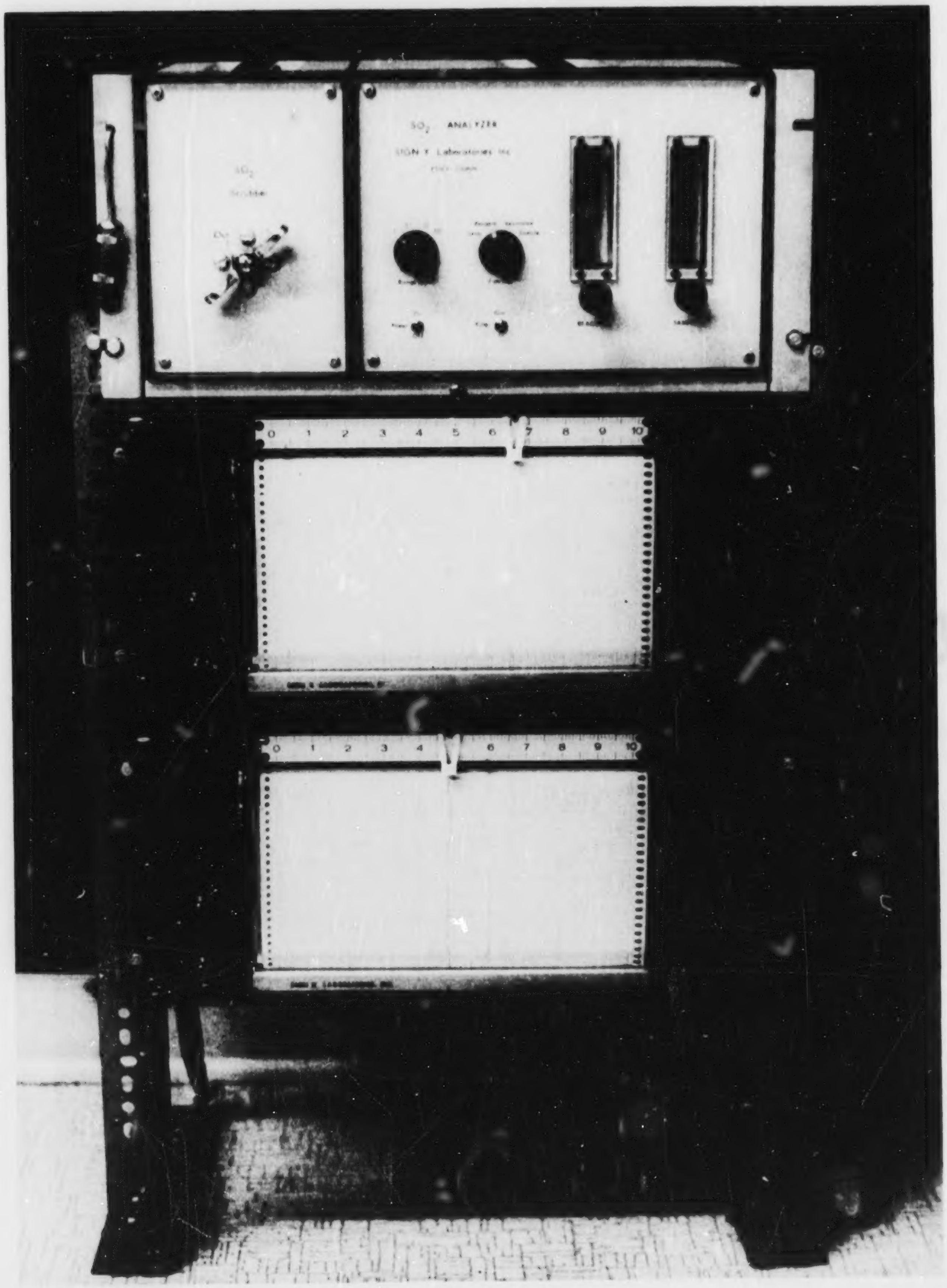
SO2 ANALYZER
0 1 2 3 4 5 6 7 8 9 10
0 1 2 3 4 5 6 7 8 9 10

Figure 5. Helicopter instrument package.

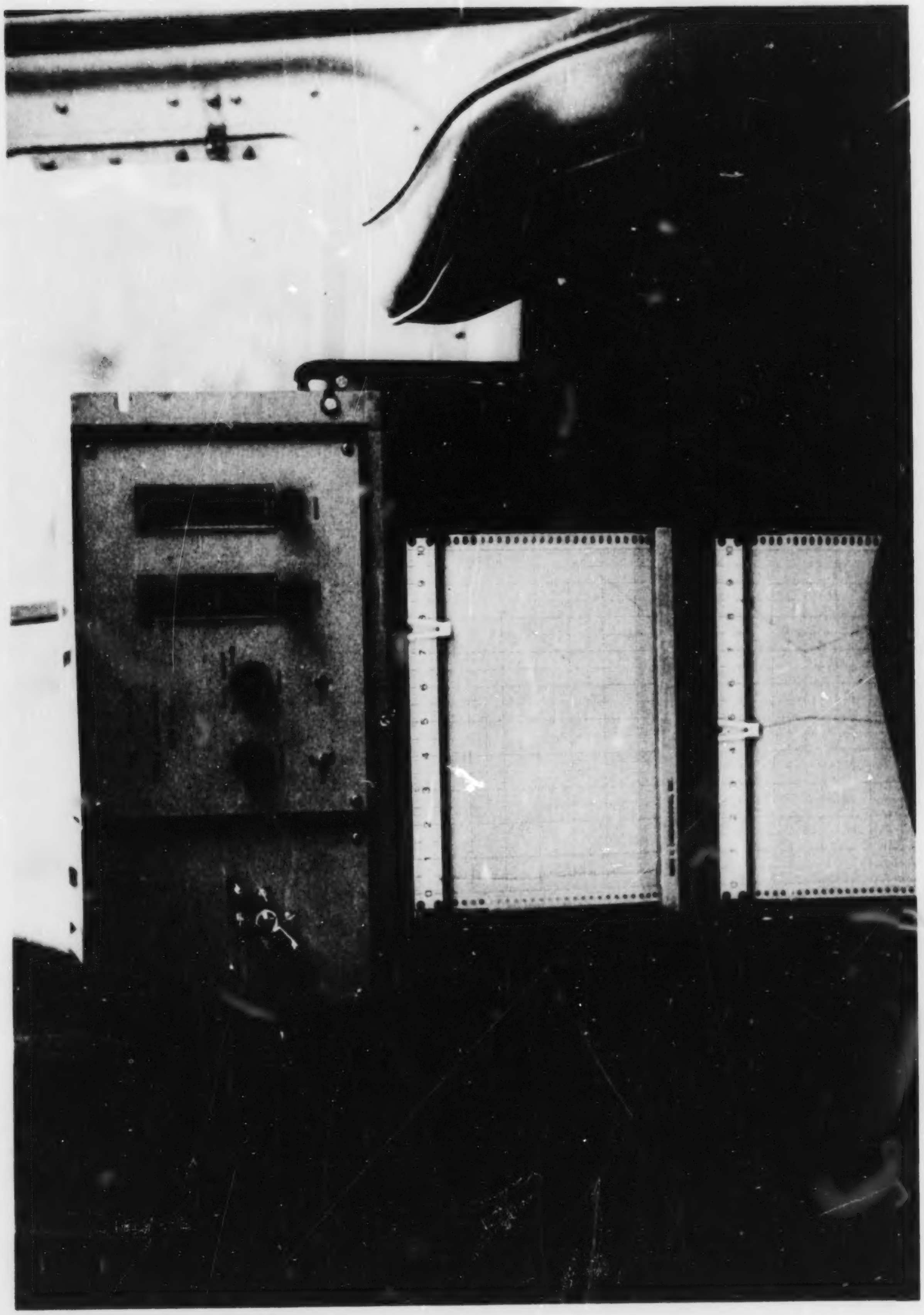

Figure 6. Interior of instrumented helicopter.

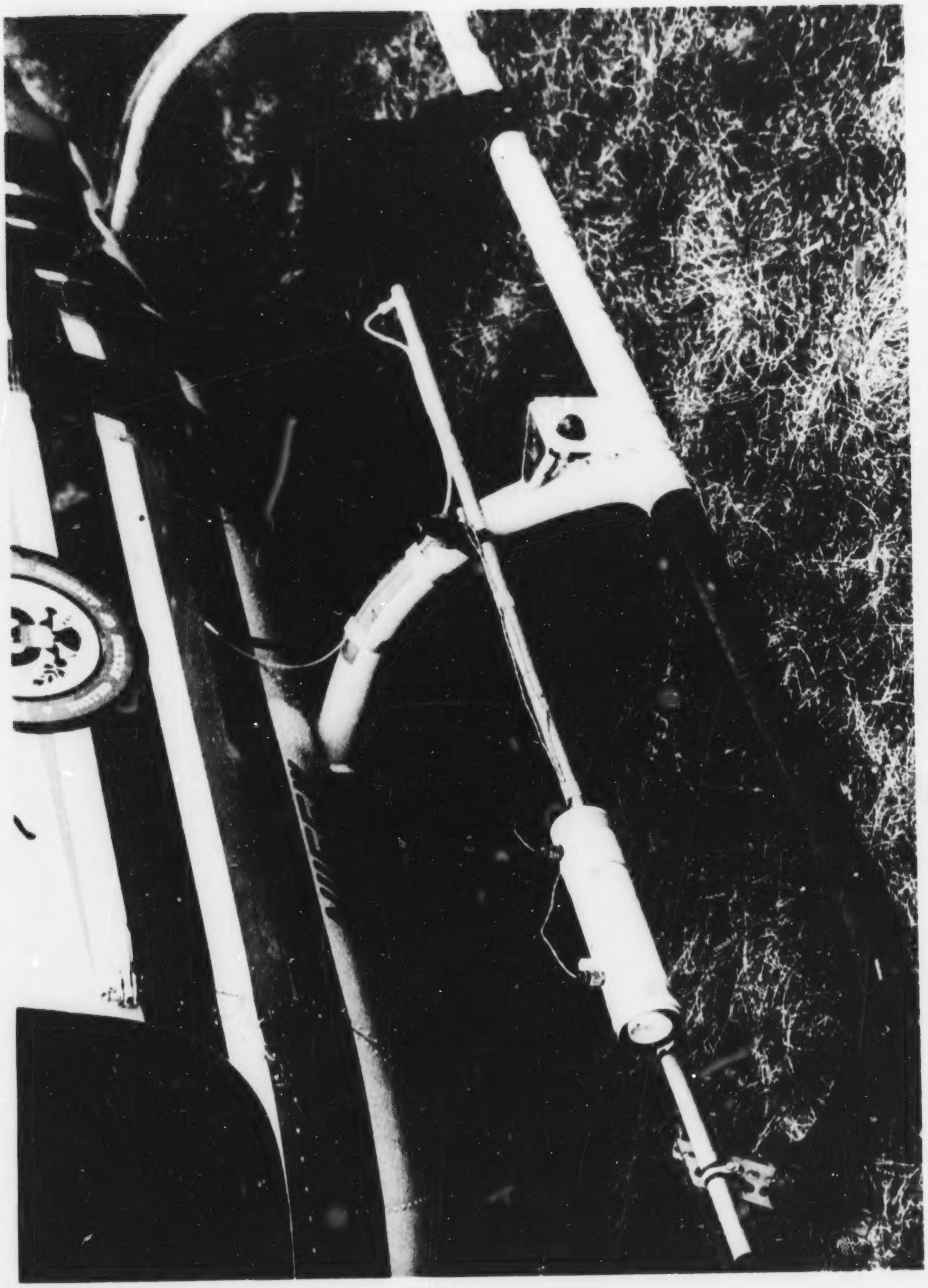

Figure 7. External helicopter probe.

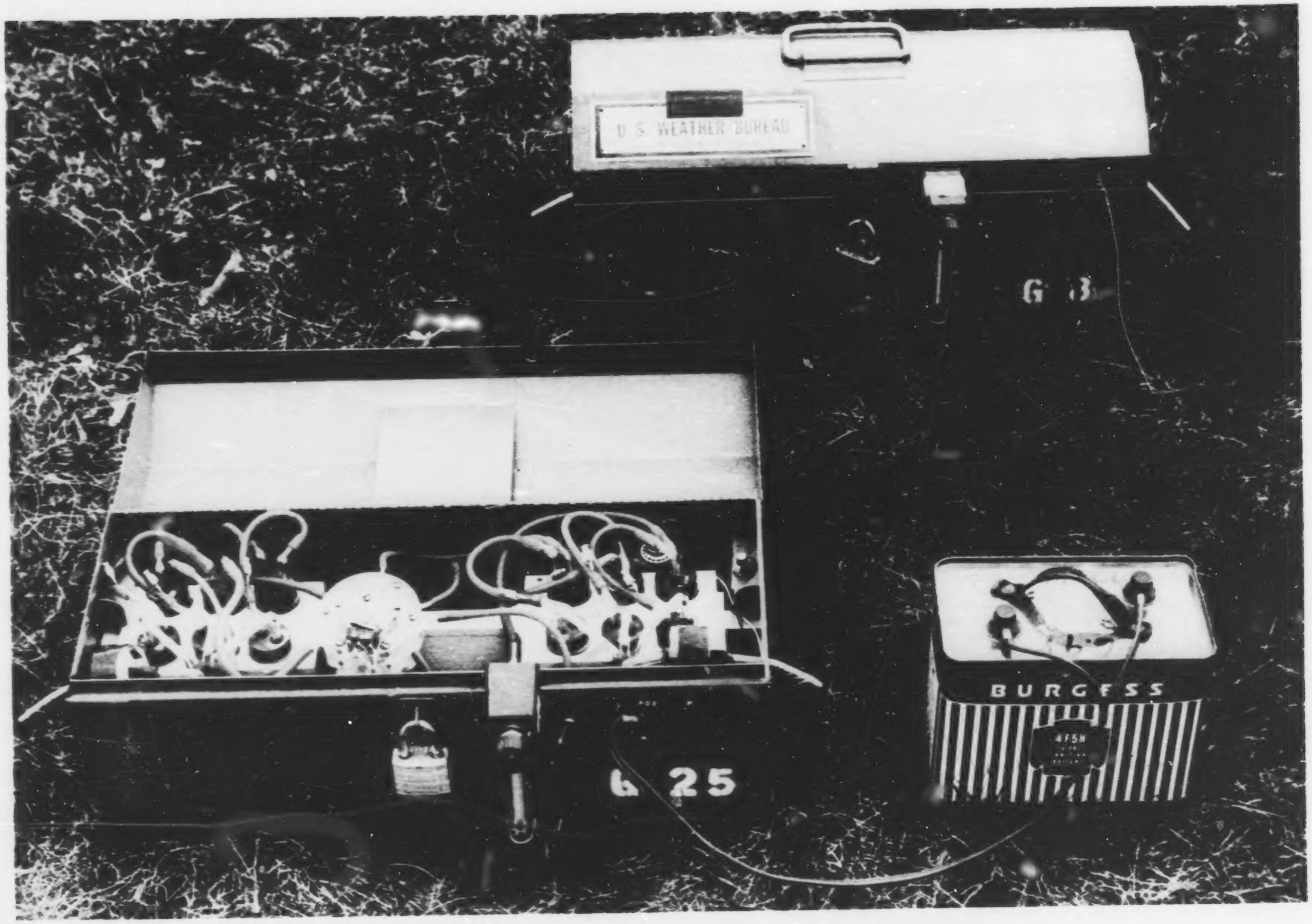
U. S. WEATHER BUREAU
G 3
G 25
BURGESS
4F5H

Figure 8. Portable SO_2 bubbler.

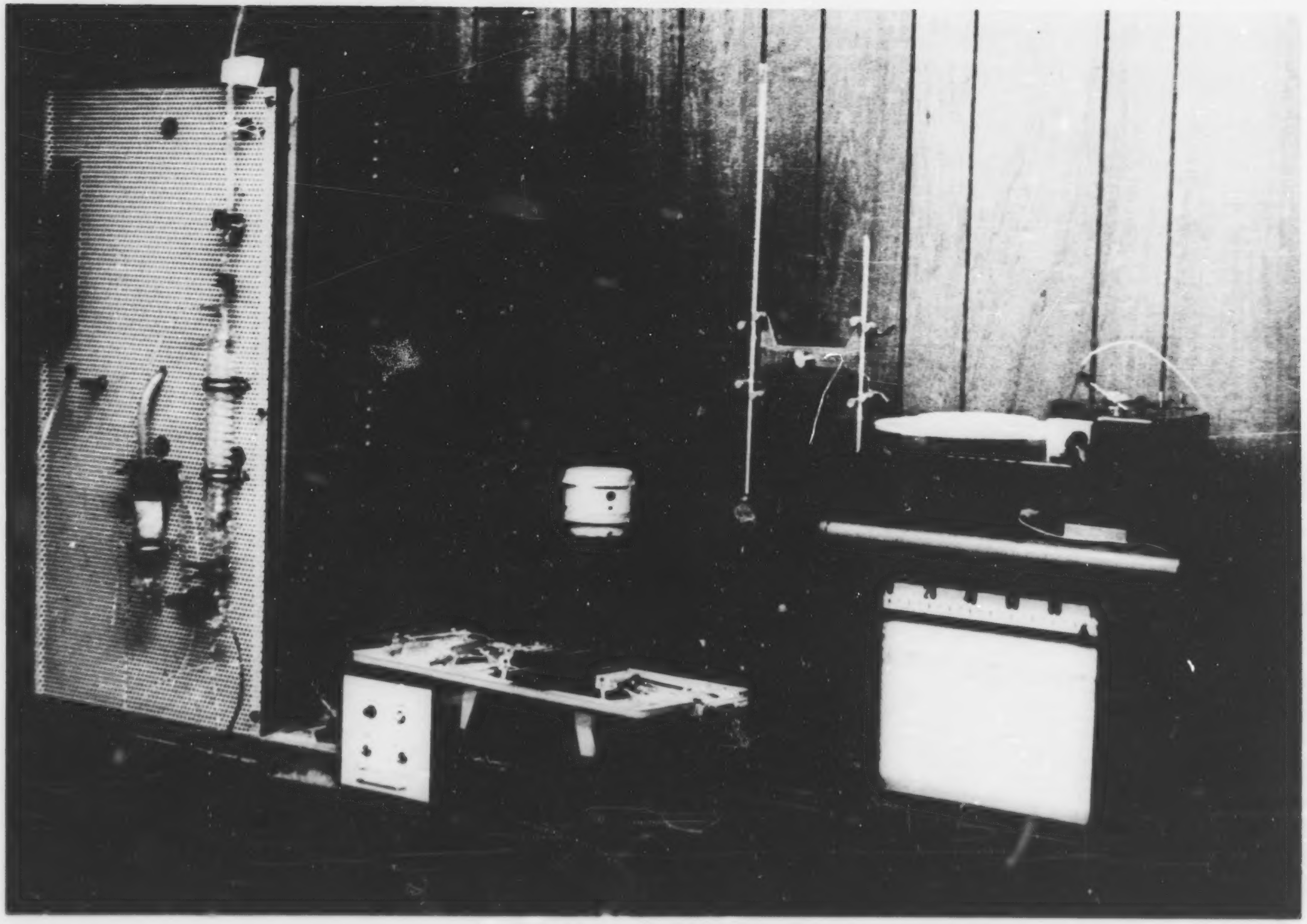

Figure 9. Technicon AutoAnalyzer.

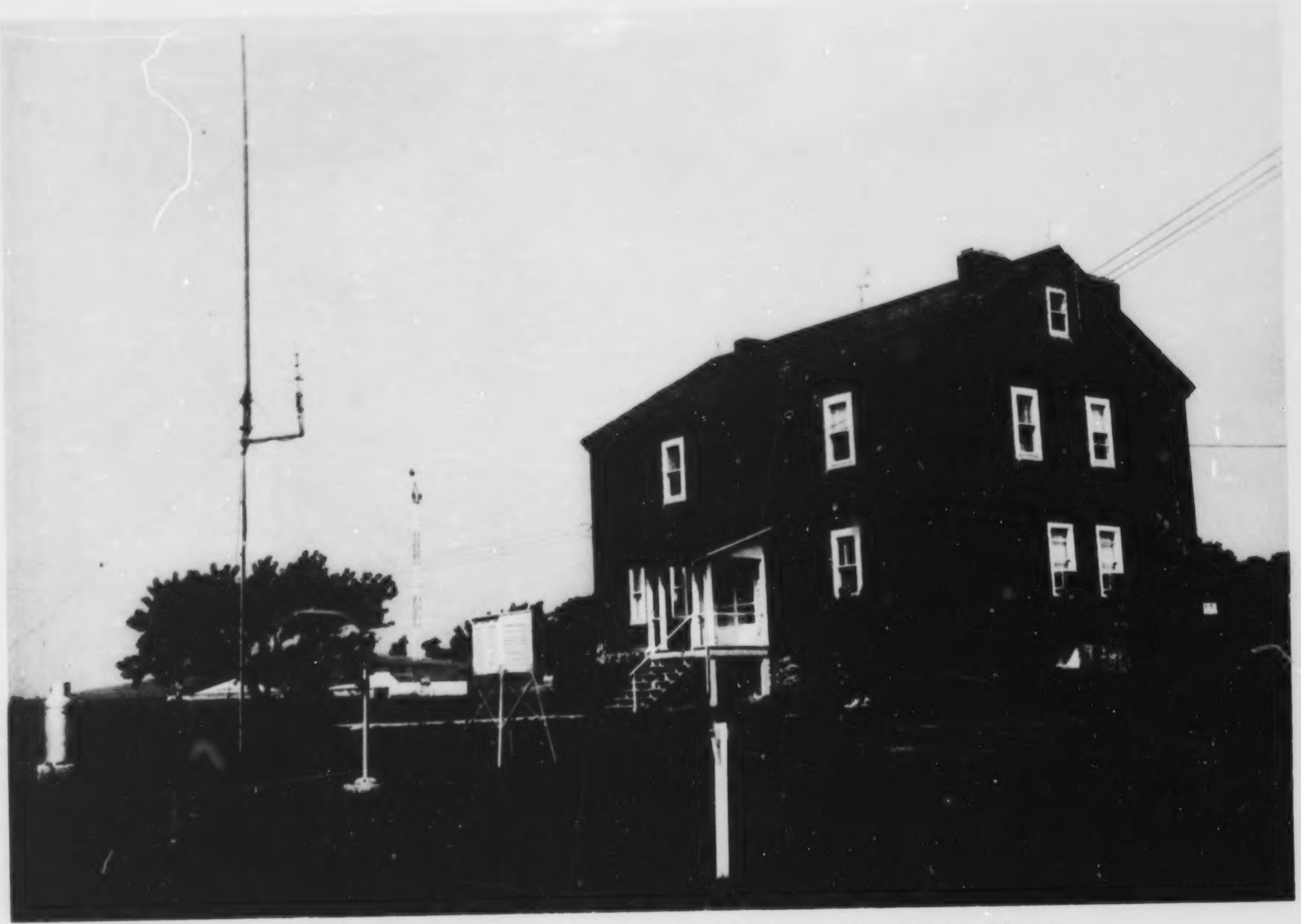

Figure 10. Surface meteorological instrumentation at Jimmy Stewart Airport.

Figure 11. Radiosonde ascent.

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PART 2 – DATA TABULATIONS

INTRODUCTION

Part 2 presents in tabulated form the meteorological and air quality measurements as well as plant operational data for one 1967 and two 1969 LAPPES series. Supplementary data that may assist in analyzing plume dispersion are also included. These consist of surface meteorological and SO_2 measurements taken at Jimmy Stewart Airport and surface and 500-millibar charts for each series day. An introduction to each set of tables describes the data and format and gives other pertinent information.

The meteorological and air quality measurements contained in Part 2 of this volume were collected during the following periods:

October 1967 LAPPES Series	:	13 - 31 October, 1967
April 1969 LAPPES Series	:	8 April - 9 May, 1969
October 1969 LAPPES Series	:	9 October - 6 November, 1969
Keystone Cooling Tower Study	:	28 November - 6 December, 1969

All data are presented in metric units because the adoption of a single consistent set of units allows more direct utilization of the data. This required conversion of the following measurements: Aerovane wind speed, surface temperature and precipitation, and all plant operational data. In these conversions, care was exercised that neither a sacrifice nor an implied gain of accuracy was effected.

Both polar and rectangular coordinate systems are utilized in this data summary. With the Keystone or Homer City stacks as origin, the polar coordinates locate specific points such as cross section reference points and bubbler sites. On the other hand, right-hand rectangular coordinates are primarily used to indicate directions and have no fixed origin. The rectangular system is oriented so that plus x points downwind and plus y indicates a counterclockwise direction around the source.

DAILY EXPERIMENT SUMMARY

A summary page is presented in Table 1 for each day during 1967 and 1969 on which flights were made by the LAPPES helicopter or on which data were collected by LAPPES contractors. Although hourly plant operational data are listed in Table 12, the headings in the experiment summary identify the source and number of plumes emitted each day.

The summary sheets also enumerate the types of air quality and meteorological measurements collected each day by NAPCA personnel. Although data from contractors' activities are not included in this volume, their participation is noted on appropriate days. Also included is a commentary in which deviations from normal experimental procedures are explained and items of relevant information are presented. During the October 1969 series, the Homer City plume occasionally traversed Chestnut Ridge: this fact is mentioned in the commentary on appropriate days to alert the reader that the surface elevation under the plume was considerably higher than stack base elevation.

The final section of each daily summary consists of a brief description of the existing synoptic situation and the surface and 500-millibar charts from the Daily Weather Map.[14] During the October 1967 series, the 0100 EST surface chart from the same day and the 1900 EST 500-millibar chart from the previous evening are shown; the 0700 EST surface and 500-millibar charts are used for each day of the remaining two series. This adjustment was necessitated by a change in publication of the Daily Weather Map. The plume wind data included in the synoptic description are intended only to furnish a general indication of plume direction and speed; complete wind profiles are presented later in Part 2 of this volume.

Table 1. DAILY EXPERIMENT SUMMARY

Symbols

GLC : Ground-level SO_2 concentration.

Low clouds Cloud base lower than 2000 meters above stack base elevation.

Middle clouds : Cloud base between 2000 and 6000 meters above stack base elevation.

High clouds : Cloud base higher than 6000 meters above stack base elevation.

Plume wind : Pilot balloon wind at 250 meters above stack base elevation. If pilot balloon not available, plume wind determined from radiosonde and so indicated.

Table 1. DAILY EXPERIMENT SUMMARY

October 1967 Series 13 October 1967 Keystone Plume Unit No. 1

SO_2 Measurements

None

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles
Airport Surface Data

Other Participants

None

Commentary

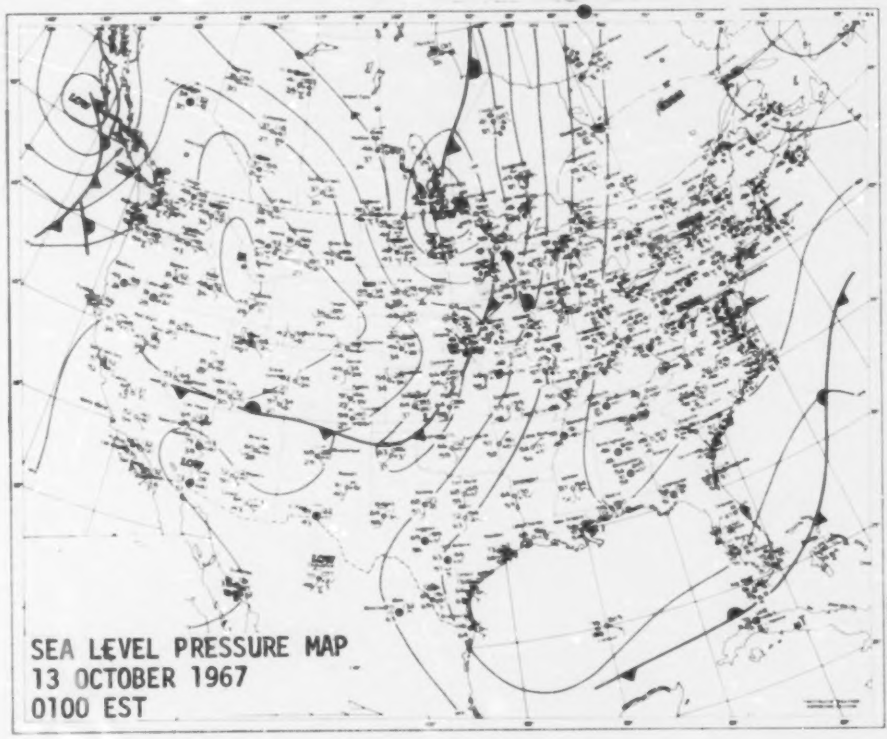
Orientation flight. No plume cross sections or GLC measurements obtained. Bubblers were not available. Pilot balloons not released because of fog in valley surrounding Keystone. Afternoon radiosonde not released.

Synoptic Situation

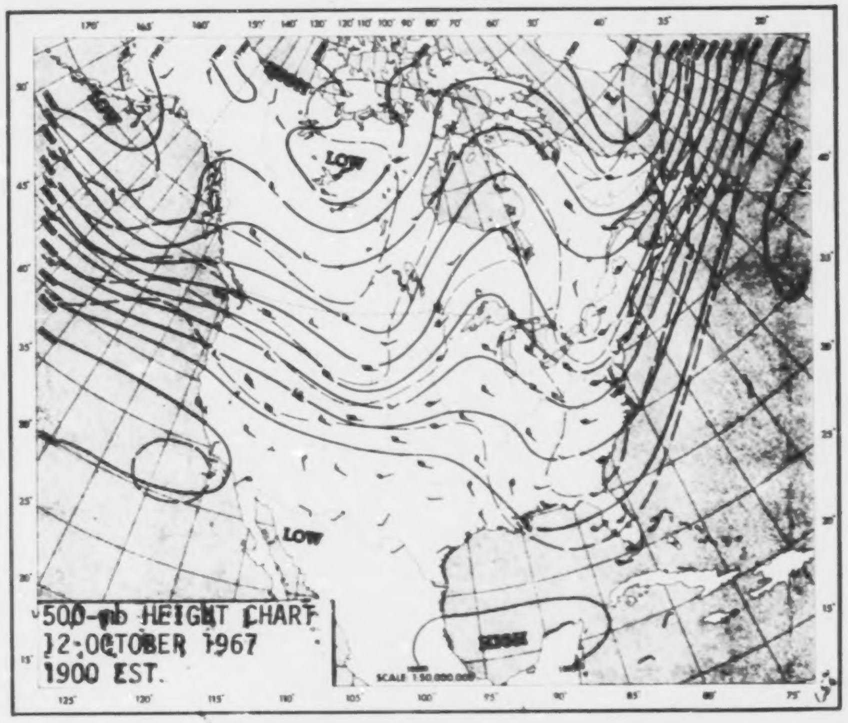
Regional - NE-SW ridge over eastern third U.S. Surface wind calm. 500-mb trough from low southwest of Greenland to Gulf coast; ridge from Missouri past Hudson Bay. Wind at 500 mb NW 15 mps.

Local - Sunrise high overcast with fog and haze. Surface inversion to 350 meters; lapse above to 1050 meters. 11 AM scattered high clouds with haze. Neutral to 1035 meters. Plume winds not available.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
13 OCTOBER 1967
0100 EST



500-mb HEIGHT CHART
12 OCTOBER 1967
1900 EST.

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1967 Series 16 October 1967 Keystone Plume Unit No. 1

SO_2 Measurements

On-Stream Autoanalyzer GLC

Meteorological Measurements

Helicopter Temperature Profiles

Airport Surface Data

Other Participants

None

Commentary

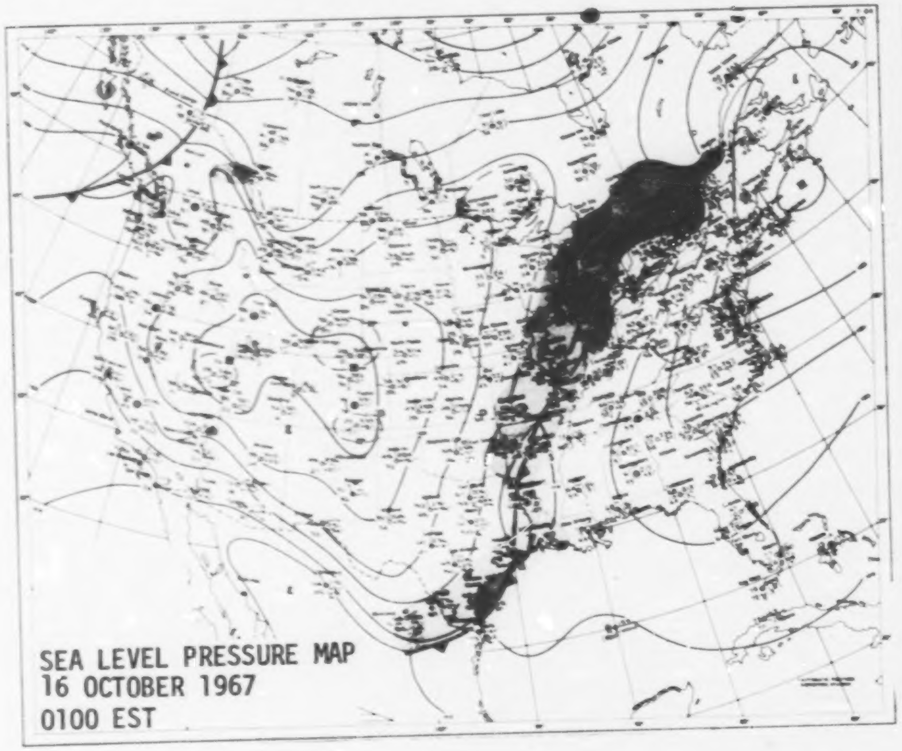
Orientation flight. No plume cross sections or GLC measurements obtained. Bubblers were not available. No radiosondes or pilot balloons released.

Synoptic Situation

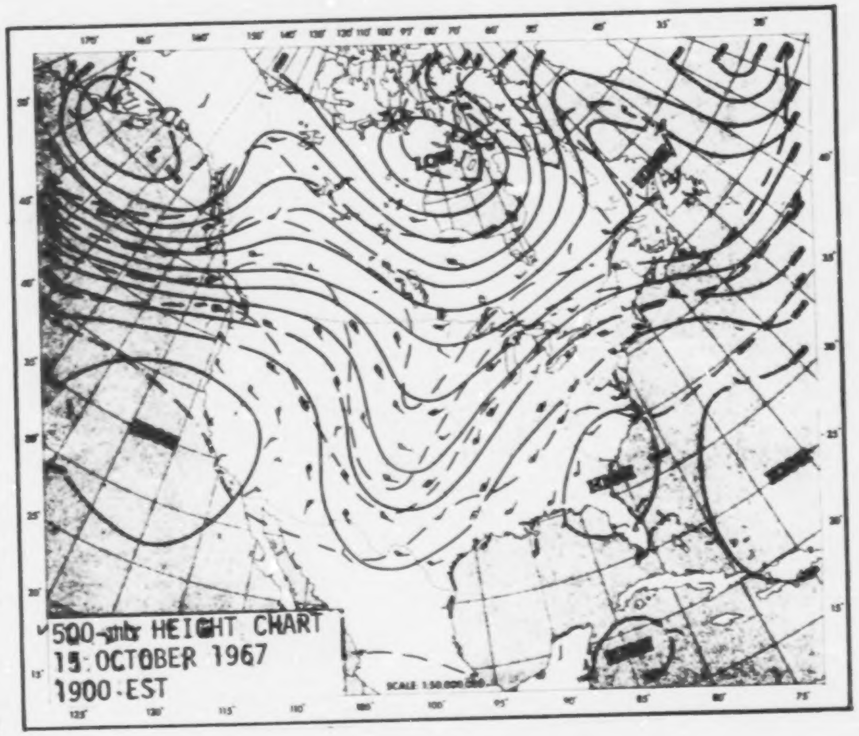
Regional - Low over Michigan with cold front to Texas coast; warm front over eastern Great Lakes. Ridge along Atlantic coast. Surface wind light southeasterly. 500-mb trough from Minnesota to Mexico; high over southeast coast. Wind at 500 mb SW 15 mps.

Local - Sunrise broken low clouds with fog. Stable with inversions to 550 meters; lapse above to 750 meters. 11 AM broken low clouds. Slight inversion at 450 meters; lapse below and above to 725 meters. Plume winds not available.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
16 OCTOBER 1967
0100 EST



500-mb HEIGHT CHART
15 OCTOBER 1967
1900 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1967 Series 17 October 1967 Keystone Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections

On-Stream Autoanalyzer GLC

Meteorological Measurements

Helicopter Temperature Profiles

Airport Surface Data

Other Participants

None

Commentary

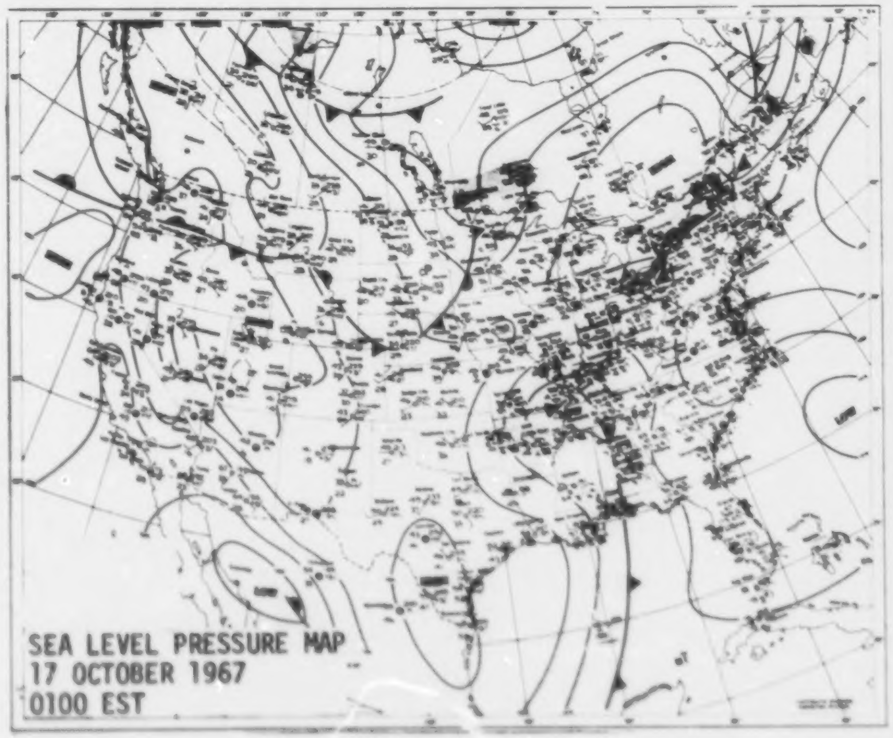
Orientation of 4.8- and 10-km cross sections arbitrarily set at 360° because of missing reference point coordinates. No 16-km cross section or ground-level flights attempted. Bubblers were not available. No radiosondes or pilot balloons released.

Synoptic Situation

Regional - Low over southern Illinois with front northeastward through Maine. Weak ridge along central and southern Atlantic coast. Surface wind light southeasterly. Eastern U.S. under leading edge of 500-mb trough formed by closed low over Oklahoma and Arkansas. Wind at 500 mb SW 20 mps.

Local - Sunrise middle overcast with fog. Stable with inversions to 700 meters; lapse above to 1000 meters. 10 AM middle overcast. Stable with inversions to 500 meters; lapse above to 767 meters. Plume wind data not available.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
17 OCTOBER 1967
0100 EST

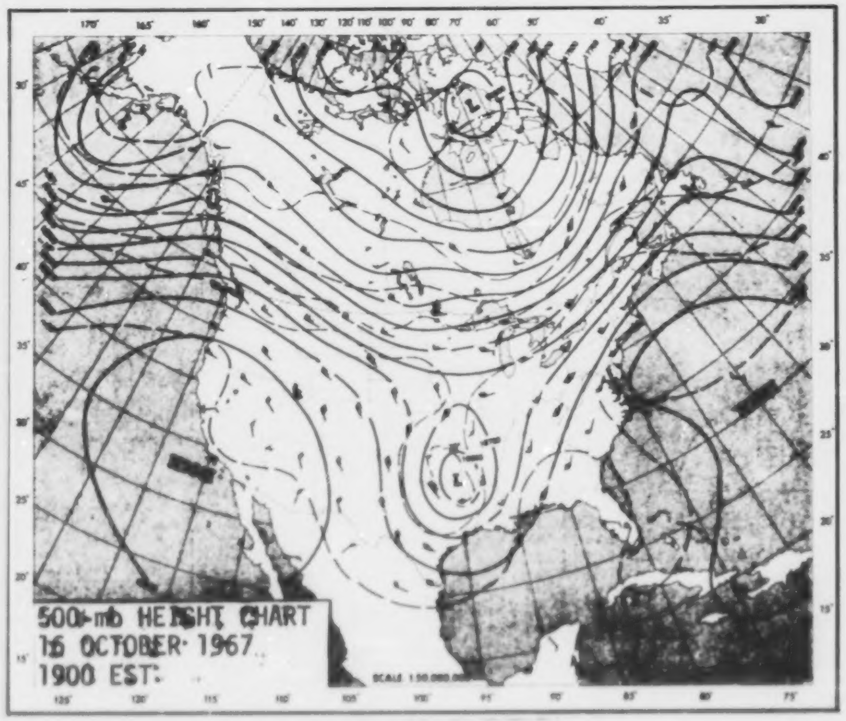

500-mb HEIGHT CHART
16 OCTOBER 1967
1900 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1967 Series 20 October 1967 Keystone Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

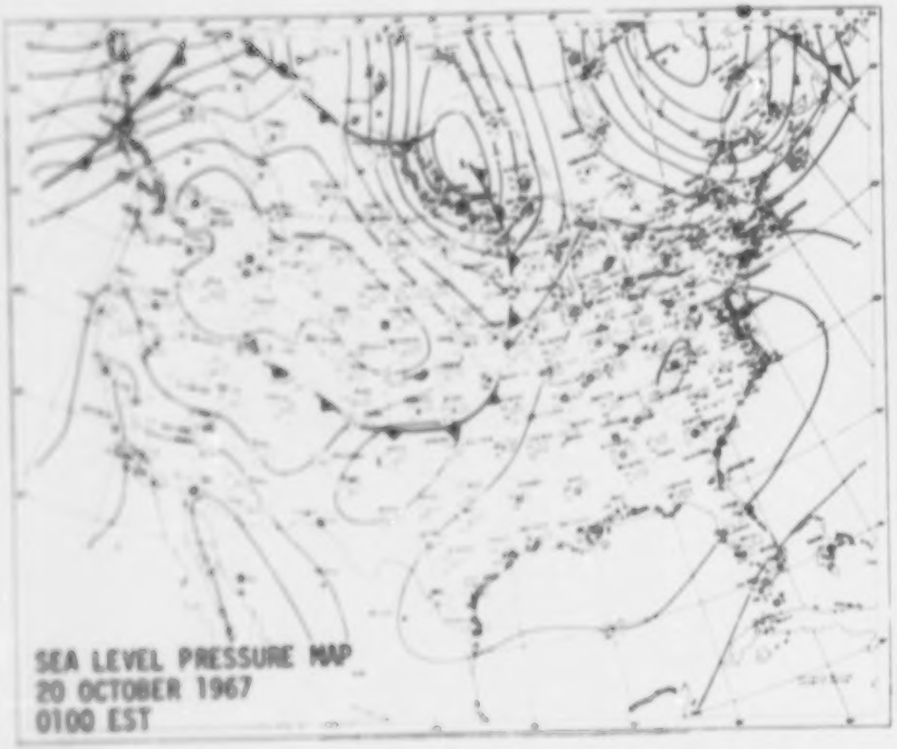
Orientation of all three cross sections arbitrarily set at 360° because of missing reference point coordinates. Plume direction was ENE. Ground-level flights terminated early; good coverage of GLC by bubblers. Morning radiosonde not available.

Synoptic Situation

Regional - High over western Virginia dominating eastern U.S. Low over western Ontario with front through Missouri. Surface wind calm. Closed 500-mb low over central Quebec with trough southward along Atlantic coast. Wind at 500 mb NW 15 mps.

Local - Sunrise clear with haze. Inversion to 350 meters and 950-1150 meters; lapse between. Plume wind SW 8 mps. 09 AM clear with haze. Inversion 322-450 meters; neutral below and lapse above to inversion at 900 meters. Plume wind SSW 6 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
20 OCTOBER 1967
0100 EST

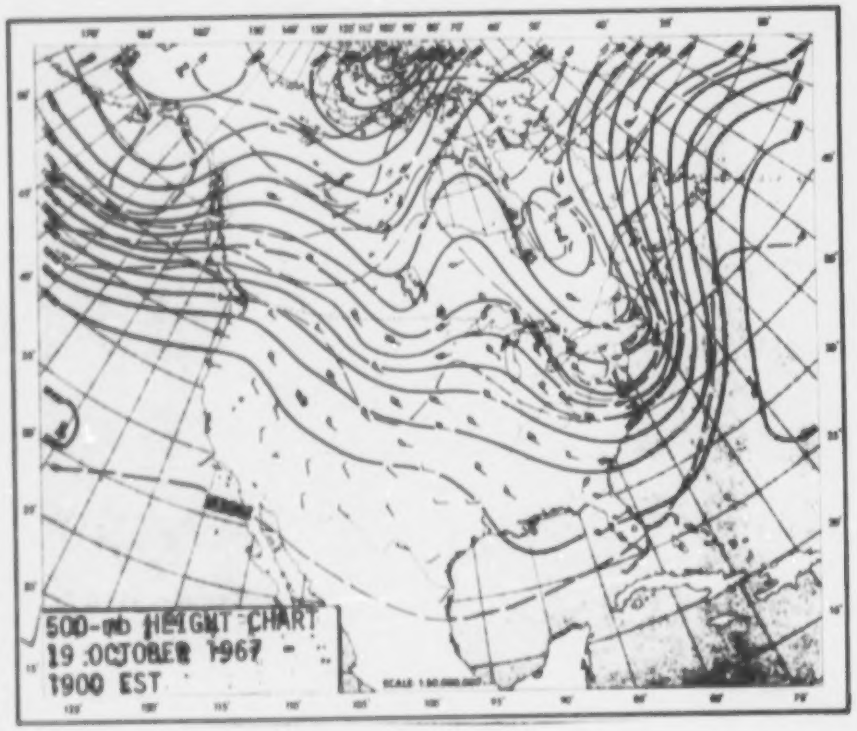

500-mb HEIGHT CHART
19 OCTOBER 1967
1900 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1967 Series 21 October 1967 Keystone Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

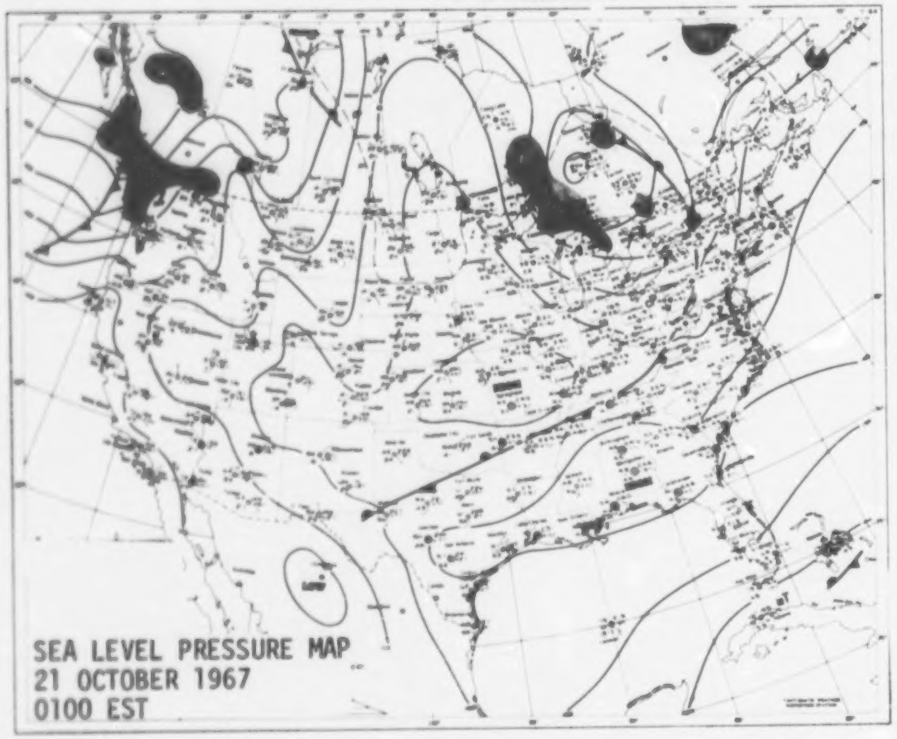
Good coverage of GLC by helicopter and bubblers. Bubblers picked up after 2 hours to facilitate analysis.

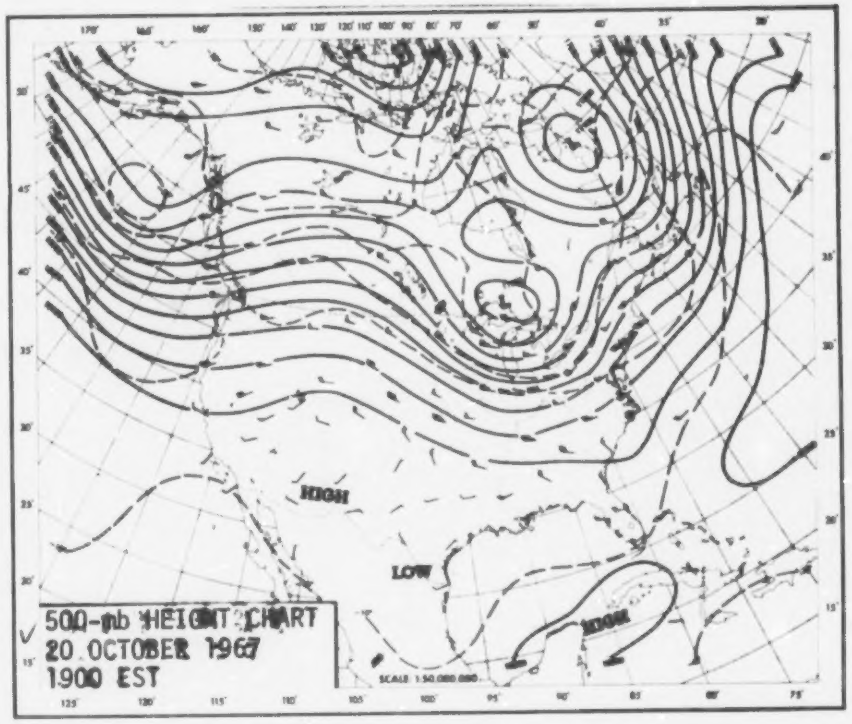
Synoptic Situation

Regional - Low over eastern Ontario with weak front through central Pennsylvania to Texas; high over Missouri. Surface wind light southwesterly. Closed 500-mb low over Lake Superior with zonal flow over eastern U.S. Wind at 500 mb WSW 25 mps.

Local - Sunrise clear. Isothermal 450-550 meters; lapse below and above to 1130 meters. Plume wind WSW 9 mps. 10 AM scattered low clouds. Near-neutral to 650 meters; stable with inversions above to 890 meters. Plume wind WSW 7 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
21 OCTOBER 1967
0100 EST


500-mb HEIGHT CHART
20 OCTOBER 1967
1900 EST

HIGH
LOW
HIGH
SCALE 1:50,000,000

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1967 Series 22 October 1967 Keystone Plume Unit No. 1

SO_2 Measurements

Helicopter Peak GLC	Portable Bubbler GLC

Meteorological Measurements

Radiosondes Helicopter Temperature Profiles	Pilot Balloons Airport Surface Data

Other Participants

None

Commentary

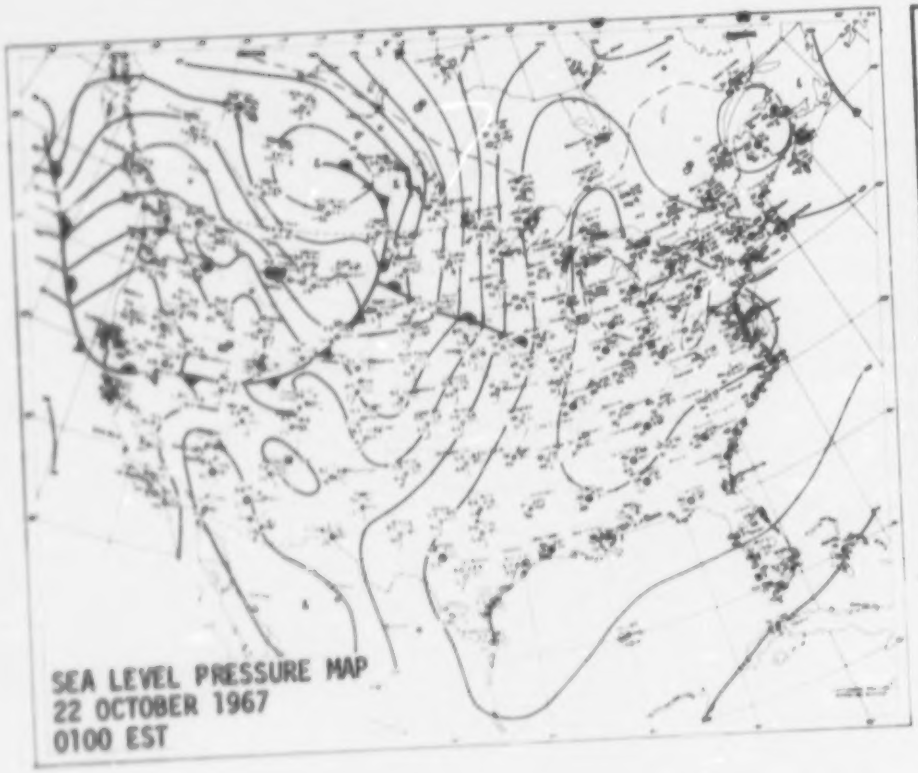
Plume cross sections invalid because of SO_2 analyzer malfunction. Helicopter GLC measurements valid. Good coverage of GLC by bubblers. Bubblers picked up after 2 hours to facilitate analysis

Synoptic Situation

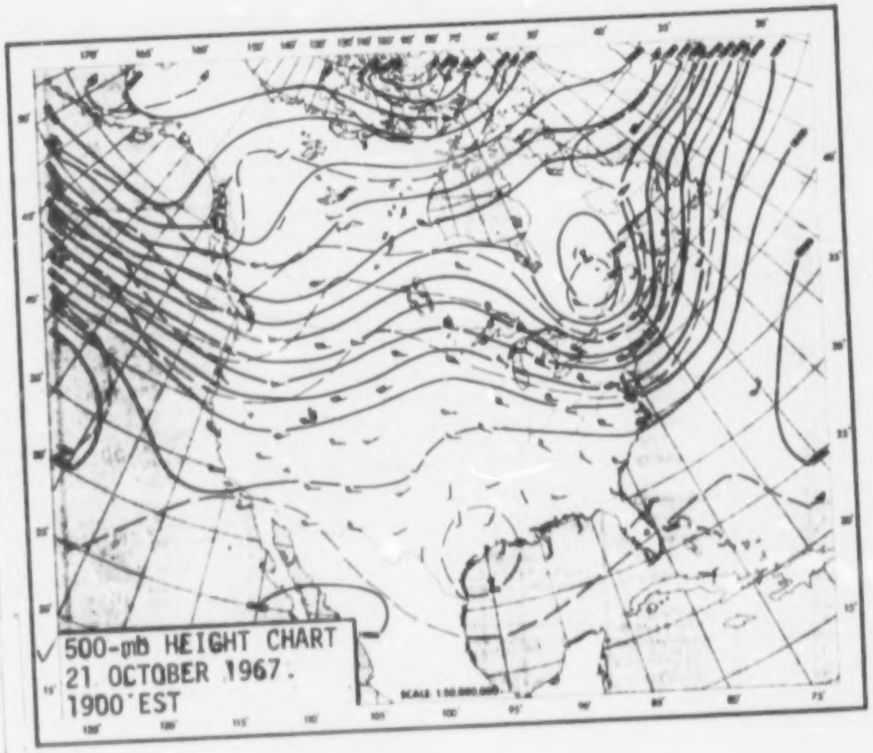
Regional - High centered over southern Ohio dominating eastern third U.S. Surface wind calm. Closed 500-mb low over southern Quebec with trough along Atlantic coast. Wind at 500 mb NW 25 mps.

Local - Sunrise scattered high clouds. Surface inversion to 350 meters; lapse above to 1050 meters. Plume wind W 2 mps. 10 AM scattered high clouds. Inversion layers 310-350 meters and 1000-1340 meters; lapse between. Plume wind WSW 1 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
22 OCTOBER 1967
0100 EST



500-mb HEIGHT CHART
21 OCTOBER 1967.
1900 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1967 Series 23 October 1967 Keystone Plume Unit No. 1

SO$_2$ Measurements

Plume Cross Sections
Helicopter Peak GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

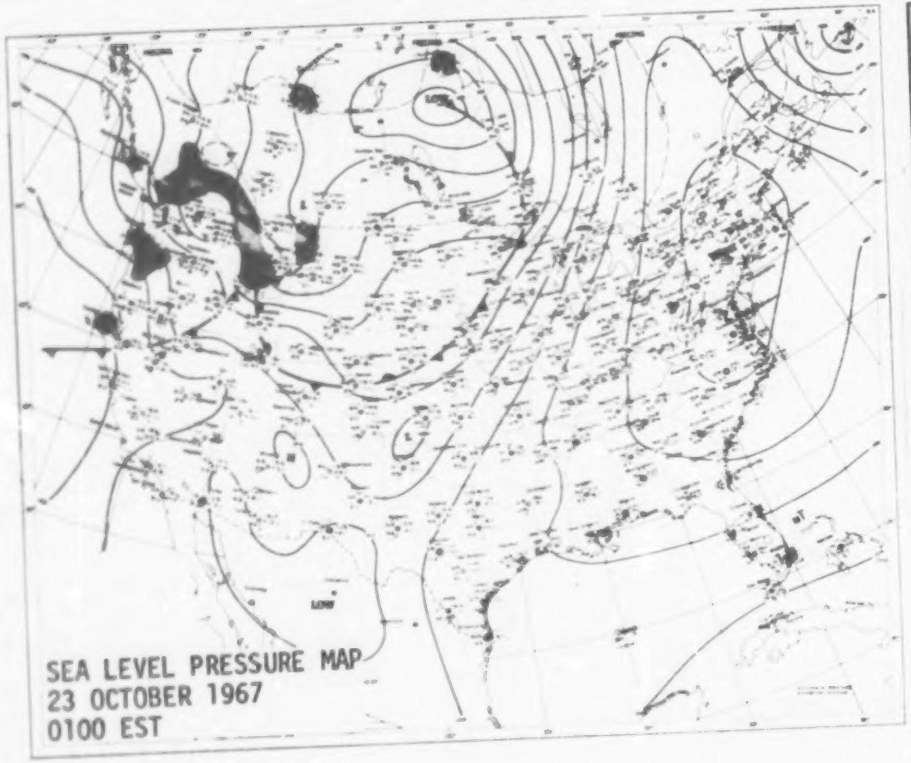
Partial coverage of GLC by helicopter and bubblers. Some bubblers picked up early because of plume shift.

Synoptic Situation

Regional - High over New England dominating eastern third of U.S. Surface wind calm. Flat 500-mb ridge from Kentucky to James Bay; low over Gulf of St. Lawrence. Wind at 500 mb WNW 12 mps.

Local - Sunrise clear. Stable with inversions to 500 meters; lapse above to inversion at 900 meters. Plume wind SSE 4 mps. Noon clear. Near-neutral to 770 meters; stable with inversions above to 1087 meters. Plume wind S 5 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
23 OCTOBER 1967
0100 EST

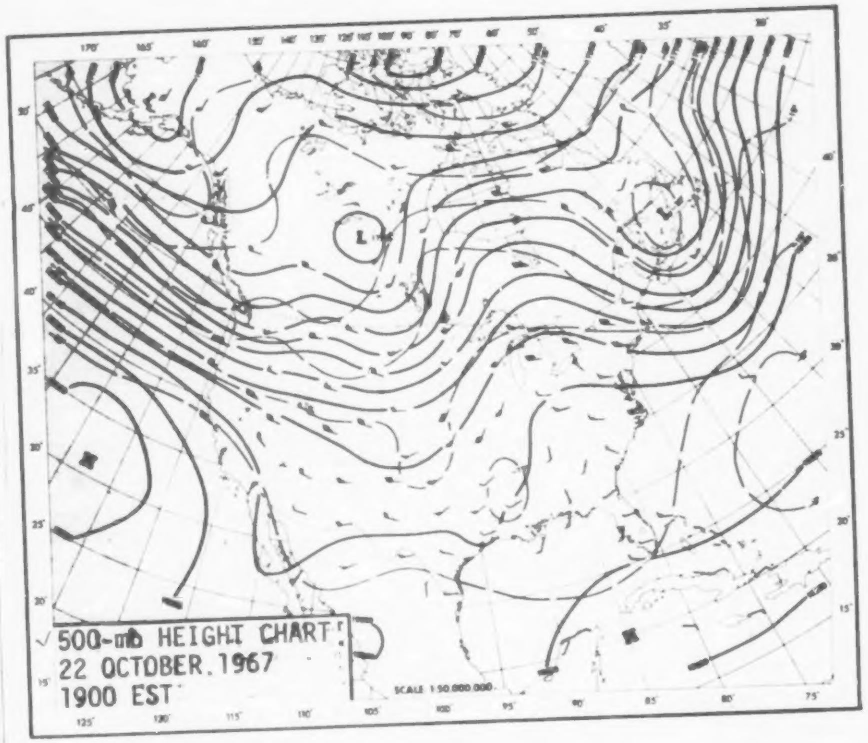

√500-mb HEIGHT CHART
22 OCTOBER 1967
1900 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1967 Series 24 October 1967 Keystone Plume Unit No. 1

SO2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

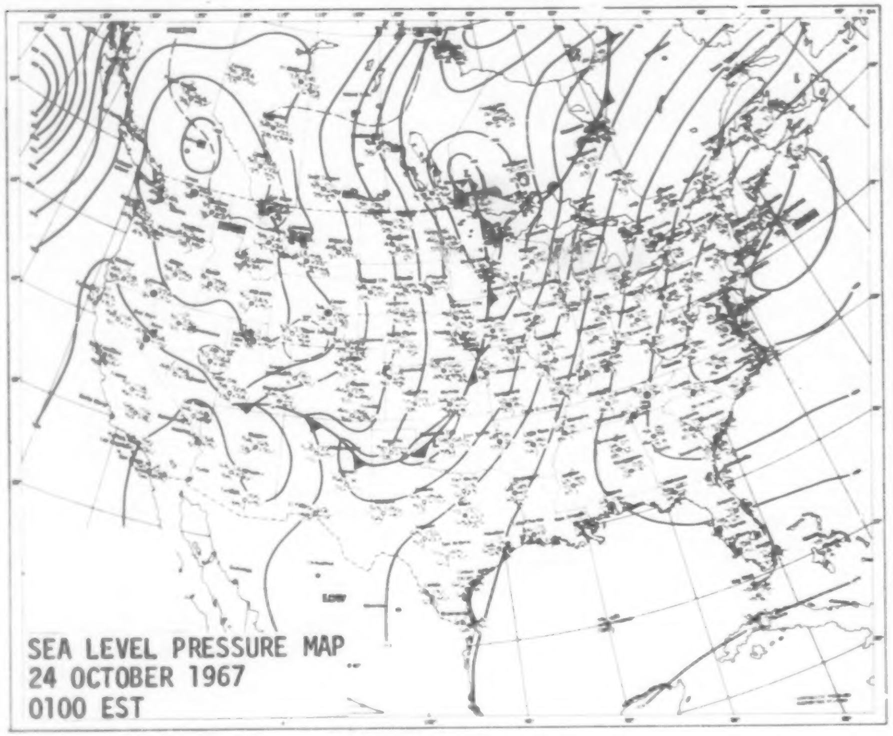
Orientation of 16-km cross section arbitrarily set at 360° because of missing reference point coordinates. Partial coverage of GLC by bubblers. Zero GLC measured by helicopter because flights were executed too far east. Low-altitude termination of last three temperature profiles caused by low clouds.

Synoptic Situation

Regional - High off New England coast with ridge to Gulf of Mexico. Surface wind light southeasterly. 500-mb ridge northeastward from New England coast. Wind at 500 mb SW 10 mps.

Local - Sunrise scattered high clouds. Stable with inversions to 1080 meters. Plume wind SE 6 mps. 11 AM broken low clouds. Near-neutral to 690 meters; stable above to 860 meters. Plume wind SSW 3 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
24 OCTOBER 1967
0100 EST

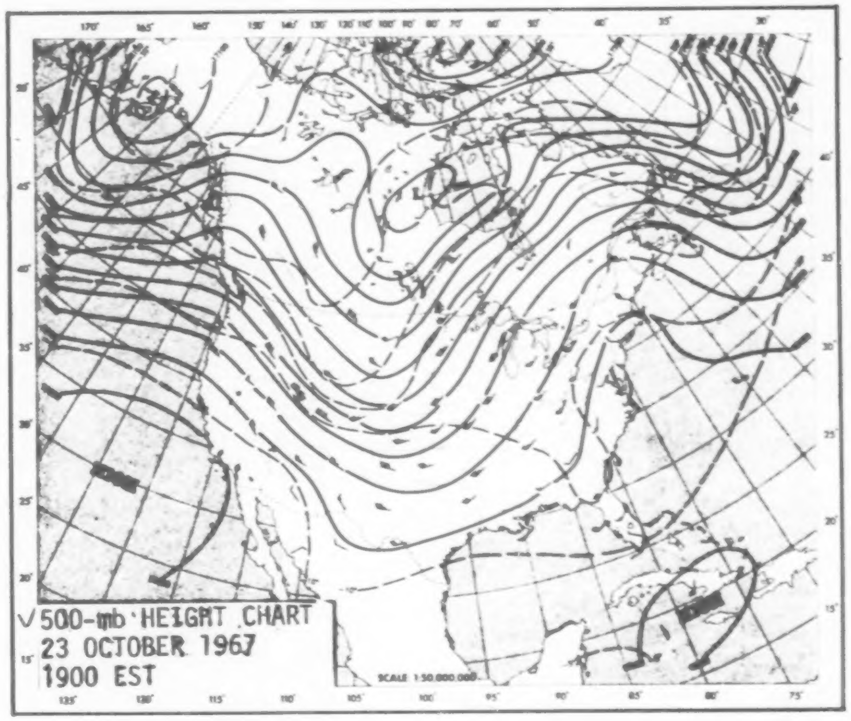

√500-mb HEIGHT CHART
23 OCTOBER 1967
1900 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1967 Series 26 October 1967 Keystone Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

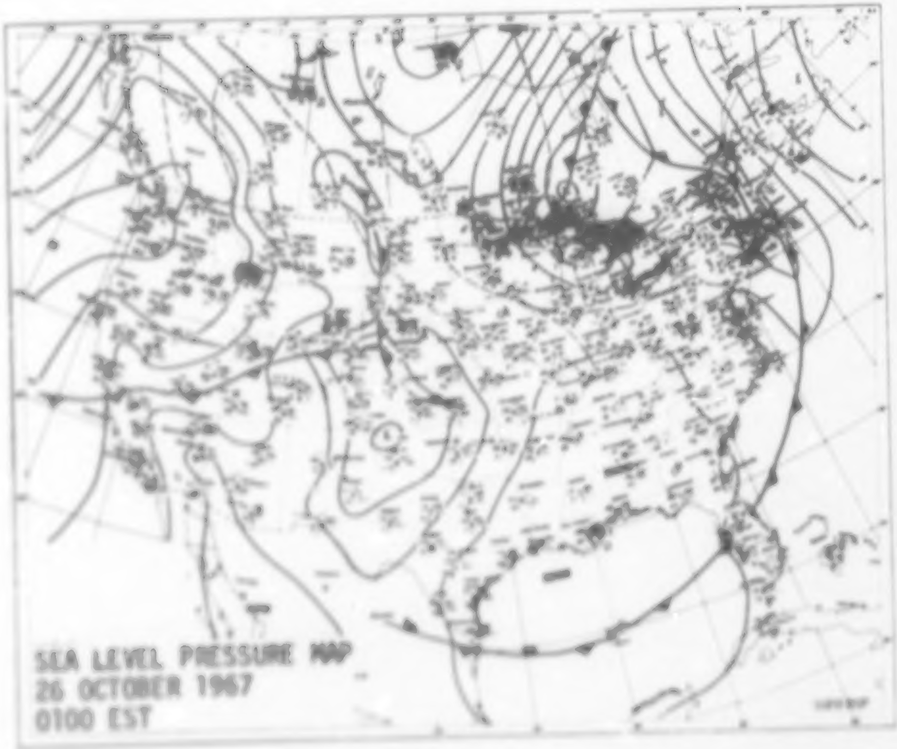
Tops of 4.8- and 10-km cross sections incomplete and 16-km cross section not attempted because of low clouds. Good coverage of GLC by helicopter; partial coverage by bubblers. Bubblers picked up early to facilitate analysis. Afternoon radiosonde not released.

Synoptic Situation

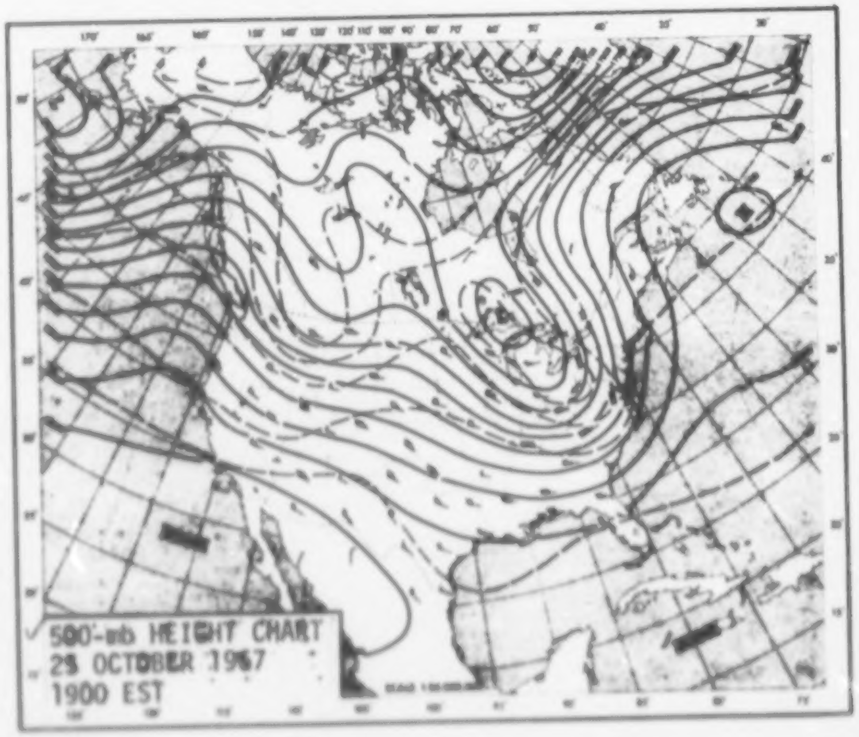
Regional - Low over Lake Superior with frontal trough along Atlantic coast; high over southeast U.S. Surface wind light southwesterly. Closed 500-mb low over Lake Superior with trough to south Atlantic coast. Wind at 500 mb SSW 15 mps.

Local - Sunrise low overcast. Slight inversion at 550 meters; lapse below and near-neutral above to 1070 meters. Plume wind WSW 7 mps. 10 AM broken low clouds. Near-neutral to 780 meters. Plume wind SW 8 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
26 OCTOBER 1967
0100 EST



500-mb HEIGHT CHART
25 OCTOBER 1967
1900 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1967 Series 27 October 1967 Keystone Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC

Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles

Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

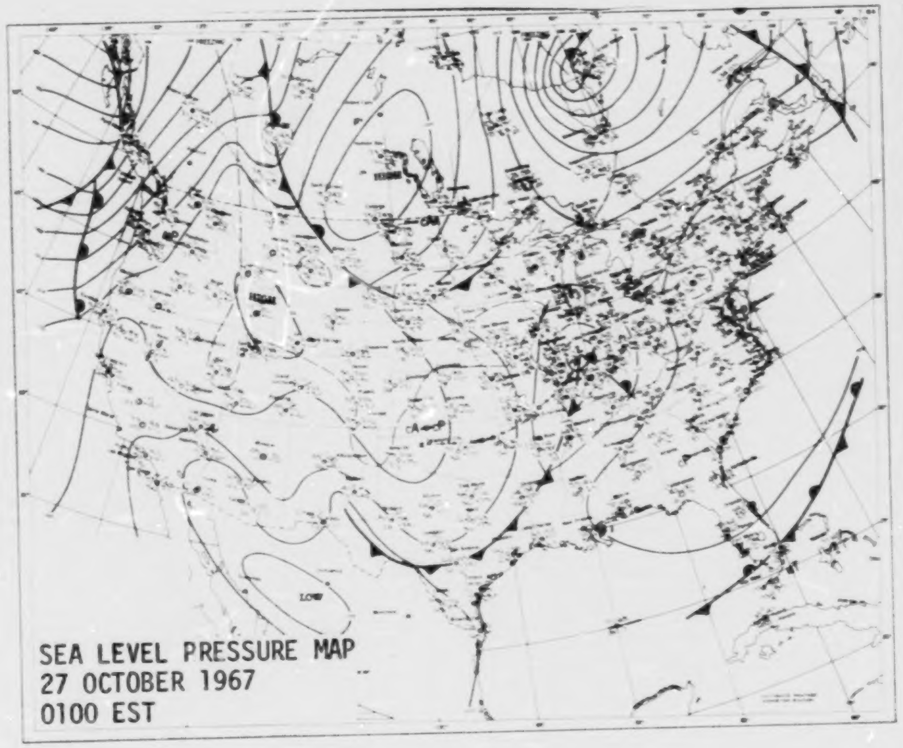
Orientation of 16-km cross section arbitrarily set at 360° because of missing reference point coordinates. Partial coverage of GLC by helicopter and bubblers. Low-altitude termination of pilot balloon runs caused by low clouds and steam plume interference.

Synoptic Situation

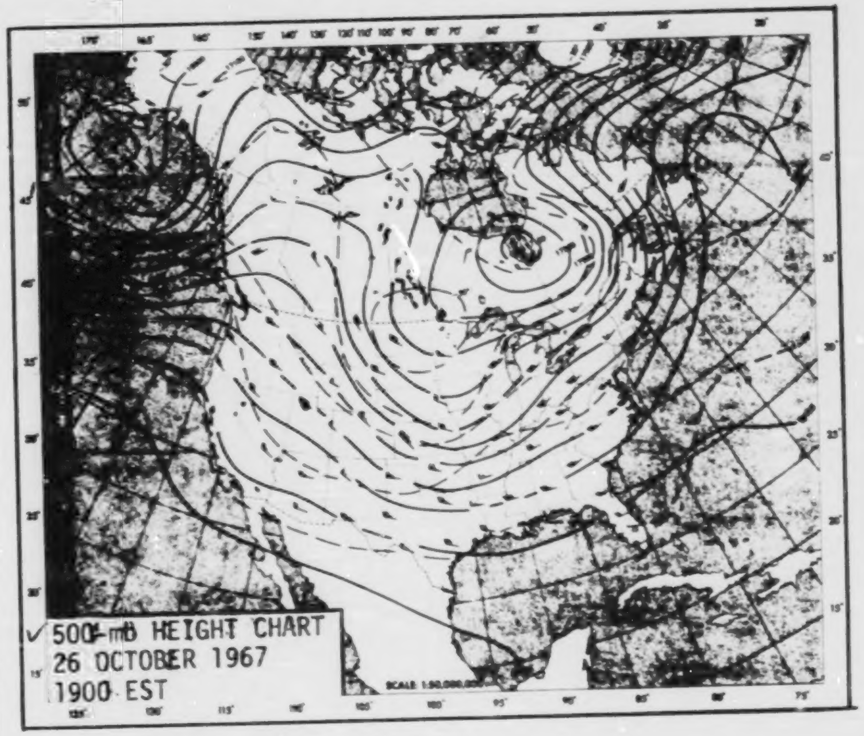
Regional - Closed lows over Hudson Bay and eastern Illinois; ridge along Atlantic coast. Surface wind calm. Closed 500-mb low over James Bay; long-wave trough over eastern U.S. Wind at 500 mb WSW 20 mps.

Local - Sunrise broken low and middle clouds. Stable with inversions to 700 meters; lapse above to 1060 meters. Plume wind SE 7 mps. 10 AM broken low and middle clouds. Lapse to 480 meters; stable with inversions above to 870 meters. Plume wind SSE 6 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
27 OCTOBER 1967
0100 EST



500-mb HEIGHT CHART
26 OCTOBER 1967
1900 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1967 Series 28 October 1967 Keystone Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

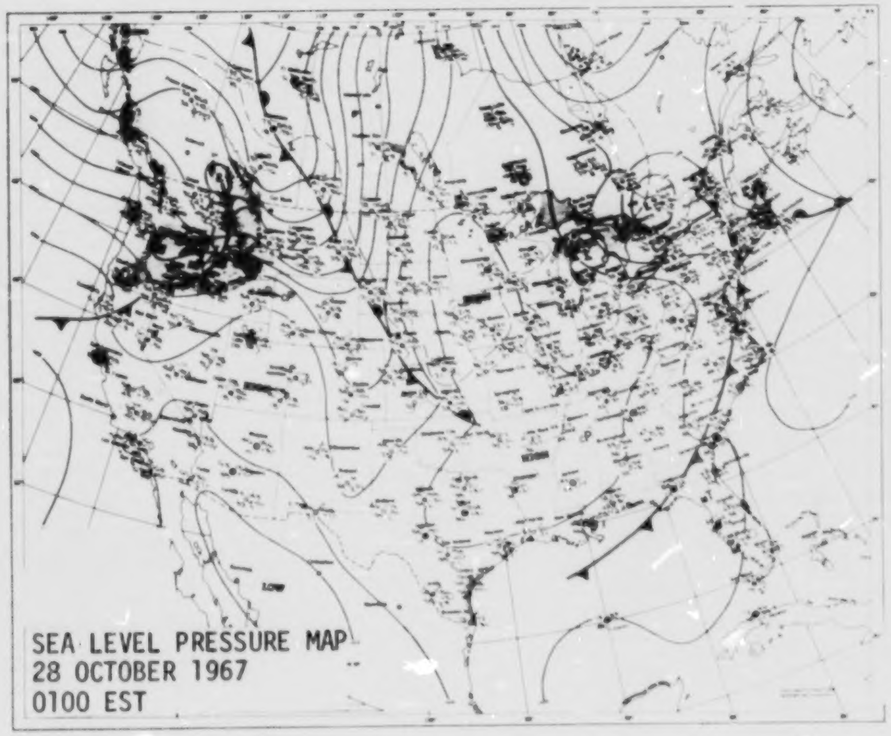
Partial coverage of GLC by bubblers. Ground-level flights discontinued because of weather. Bubblers picked up after 2 hours to facilitate analysis. Low-altitude termination of pilot balloon runs caused by low clouds.

Synoptic Situation

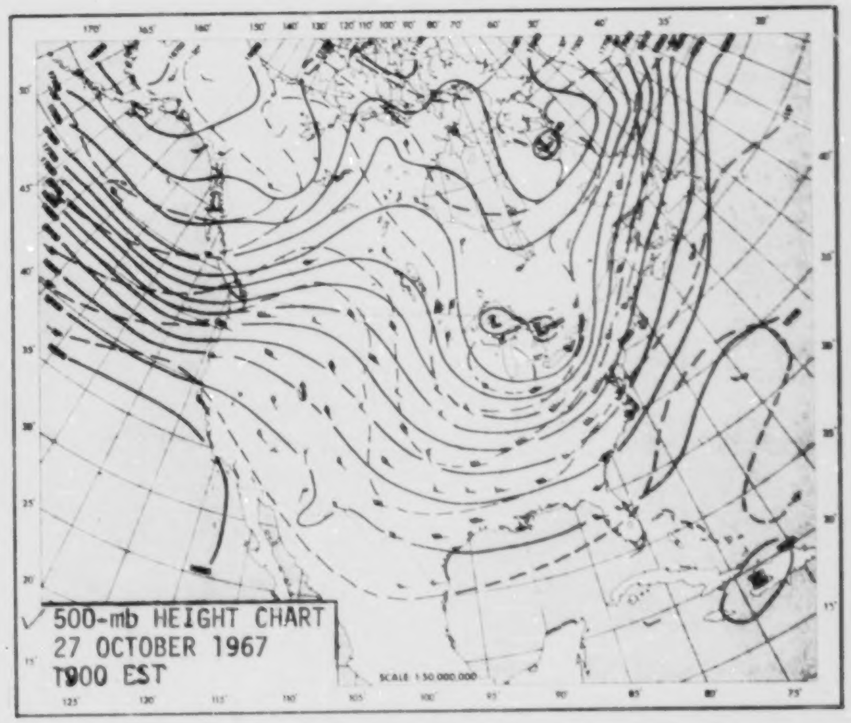
Regional - Low north of Lake Ontario with front along Atlantic coast; high over Great Plains. Surface wind SW 5 mps. Closed 500-mb low over upper Great Lakes with long-wave trough southward. Wind at 500 mb SW 35 mps.

Local - Sunrise low overcast with haze. Isothermal layer 700-750 meters; lapse below and above to 1080 meters. Plume wind WSW 5 mps. 10 AM low overcast with haze. Isothermal to 50 meters; lapse above to 730 meters. Plume wind SW 6 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
28 OCTOBER 1967
0100 EST



500-mb HEIGHT CHART
27 OCTOBER 1967
1900 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1967 Series 29 October 1967 Keystone Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

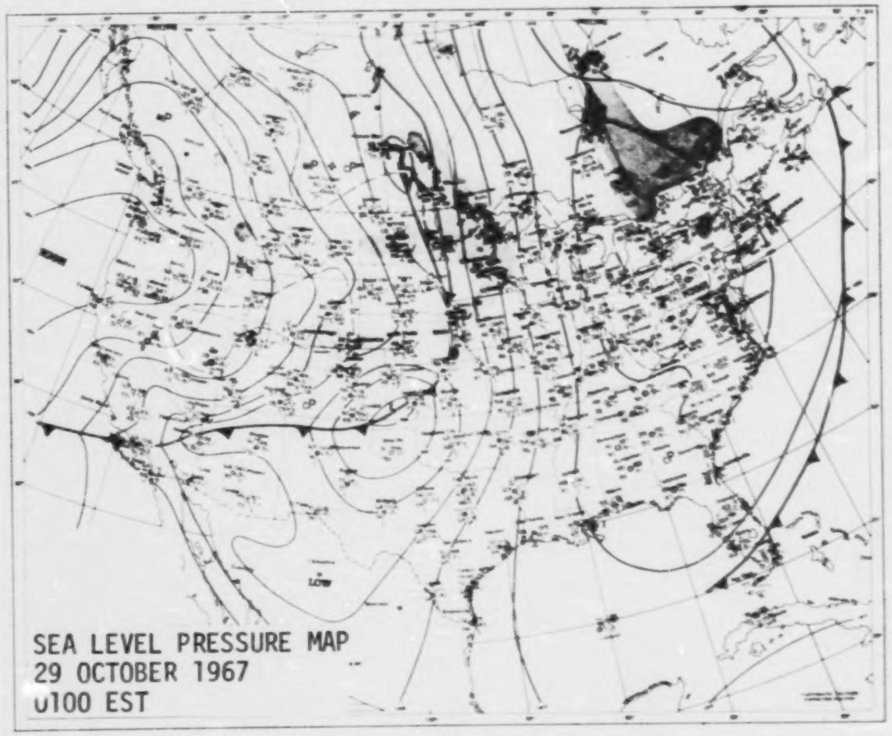
No 16-km cross section attempted; instead, the 4- and 10-km cross sections were repeated to document plume shift. Partial coverage of GLC by helicopter. Bubblers picked up after 1 hour because plume shifted away. Low-altitude termination of last two temperature profiles caused by low clouds.

Synoptic Situation

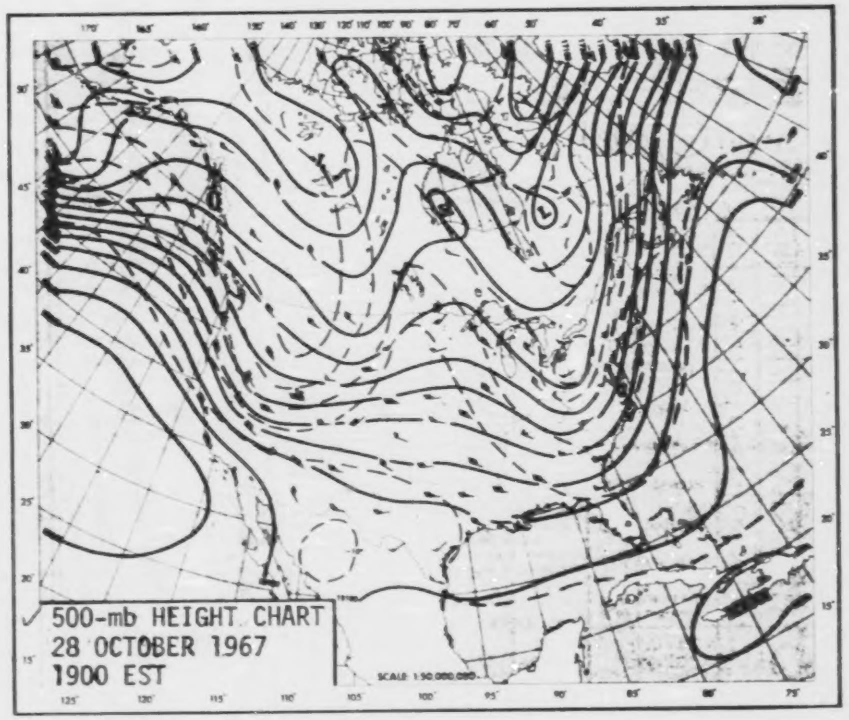
Regional - High centered over Pennsylvania dominating eastern half U.S. Surface wind calm. 500-mb low over central Quebec with N-S trough over eastern U.S. Wind at 500 mb W 8 mps.

Local - Sunrise clear with fog and haze. Stable with inversions to 330 meters and 950-1070 meters; lapse between. Plume wind SE 4 mps. 1030 AM broken low clouds with haze. Neutral to 50 meters; stable above to 540 meters. Plume wind E 2 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
29 OCTOBER 1967
0100 EST



500-mb HEIGHT CHART
28 OCTOBER 1967
1900 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1967 Series 30 October 1967 Keystone Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

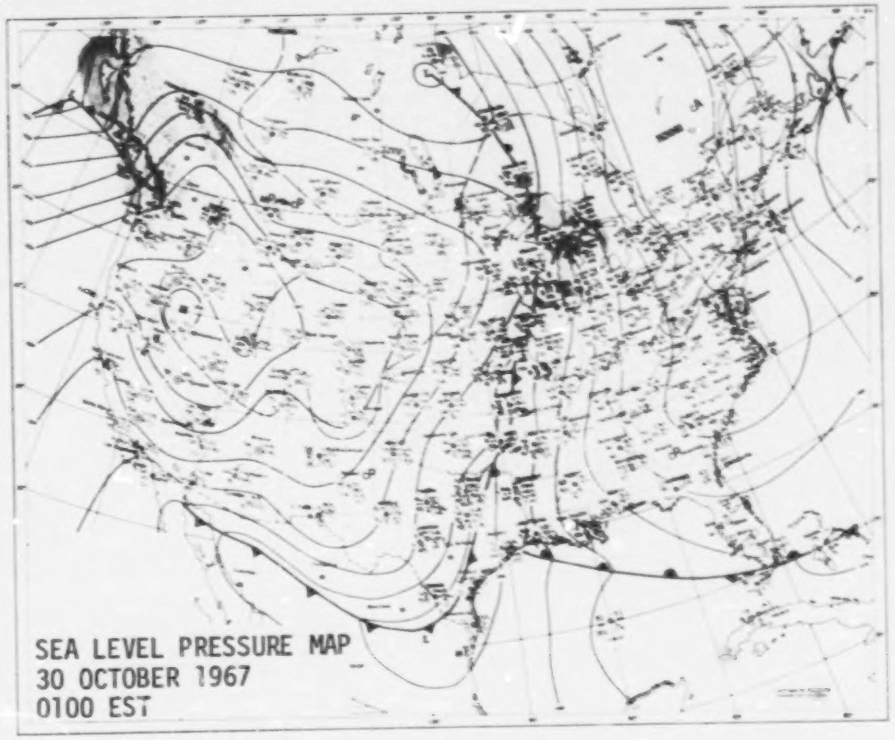
No 16-km cross section attempted because of extreme plume width; instead, the 4.8-km cross section was repeated to document plume shift. Partial coverage of GLC by bubblers. Zero GLC measured by helicopter because flights were executed too far east. Morning radiosonde not available.

Synoptic Situation

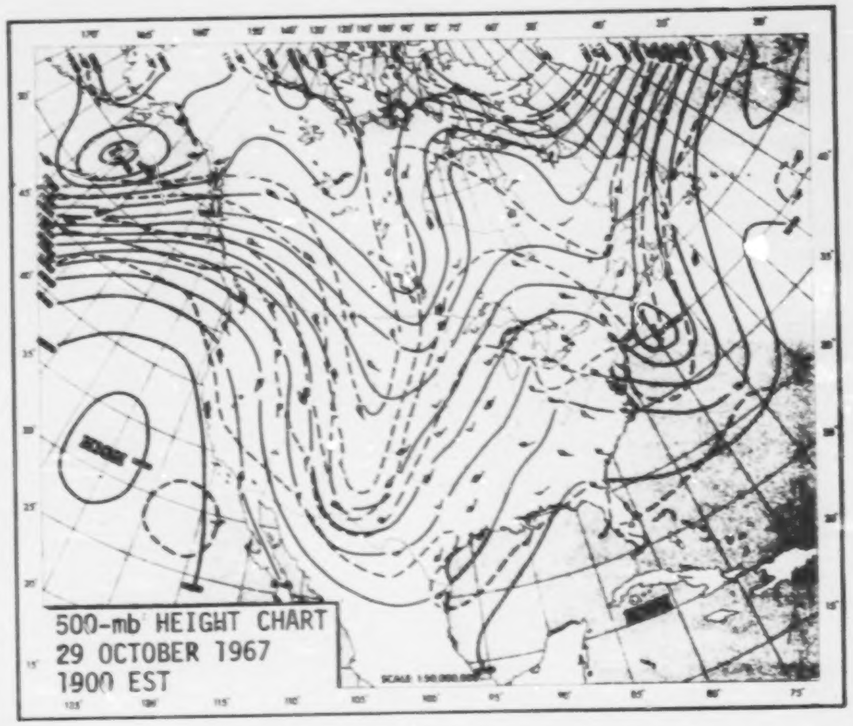
Regional - High over Quebec with ridge along Atlantic coast; N-S front through Mississippi Valley. Surface wind near calm. N-S 500-mb trough off New England coast; ridge from Florida to Hudson Bay. Wind at 500 mb NW 15 mps.

Local - Sunrise clear. Stable with inversions to 1380 meters. Plume wind E 5 mps. Noon clear. Lapse to 450 meters; stable above to 650 meters. Plume wind ENE 4 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
30 OCTOBER 1967
0100 EST



500-mb HEIGHT CHART
29 OCTOBER 1967
1900 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1967 Series 31 October 1967 Keystone Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

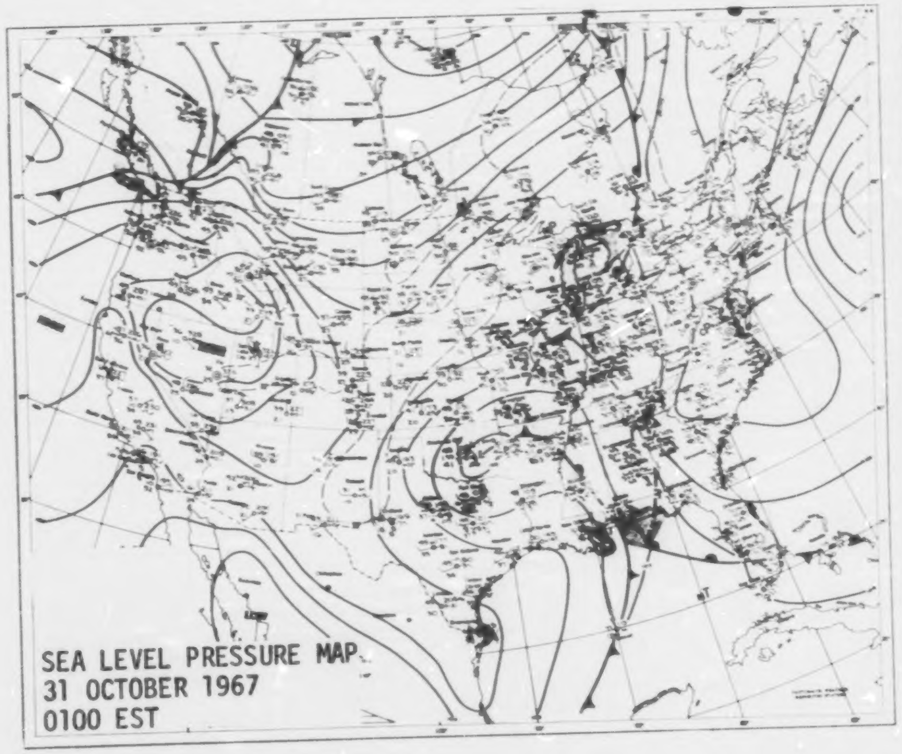
Orientation of 16-km cross section arbitrarily set at 360° because of missing reference point coordinates. 10-km cross section repeated to document plume shift. Good coverage of GLC by bubblers. Zero GLC measured by helicopter. Low-altitude termination of last four temperature profiles caused by low clouds.

Synoptic Situation

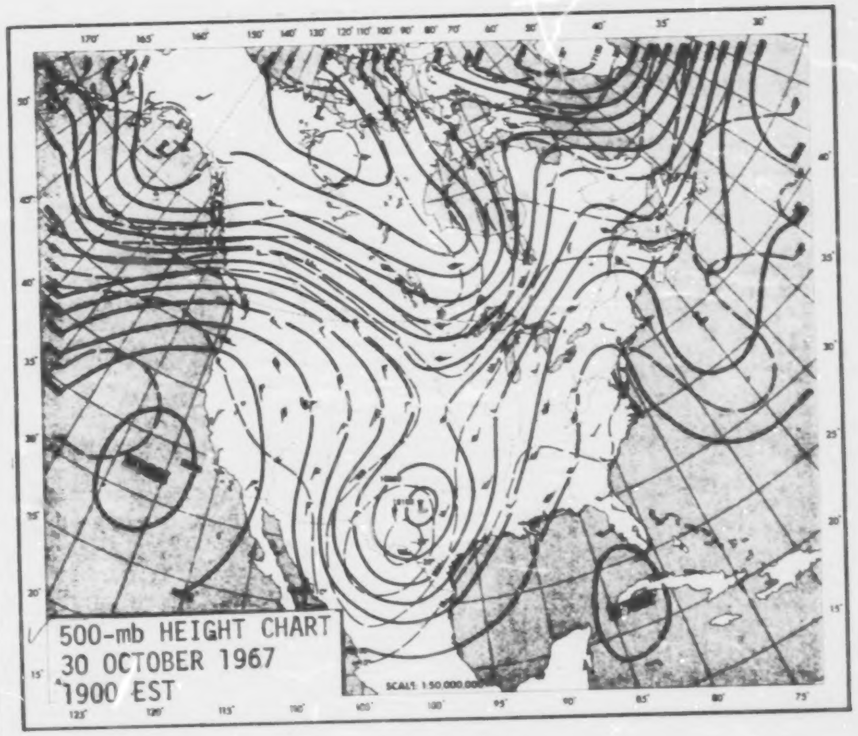
Regional - N-S ridge along Atlantic coast. Low in Oklahoma with frontal trough through Lake Huron. Surface wind light easterly. 500-mb ridge along Atlantic coast; deep low over Texas. Wind at 500 mb SW 10 mps.

Local - Sunrise broken high clouds. Stable with inversions to 1125 meters. Plume wind E 6 mps. Noon low overcast. Isothermal 350-400 meters; lapse below and above to 770 meters. Plume wind E 4 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
31 OCTOBER 1967
0100 EST



500-mb HEIGHT CHART
30 OCTOBER 1967
1900 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 8 April 1969 Keystone Plume Units No. 1 and 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

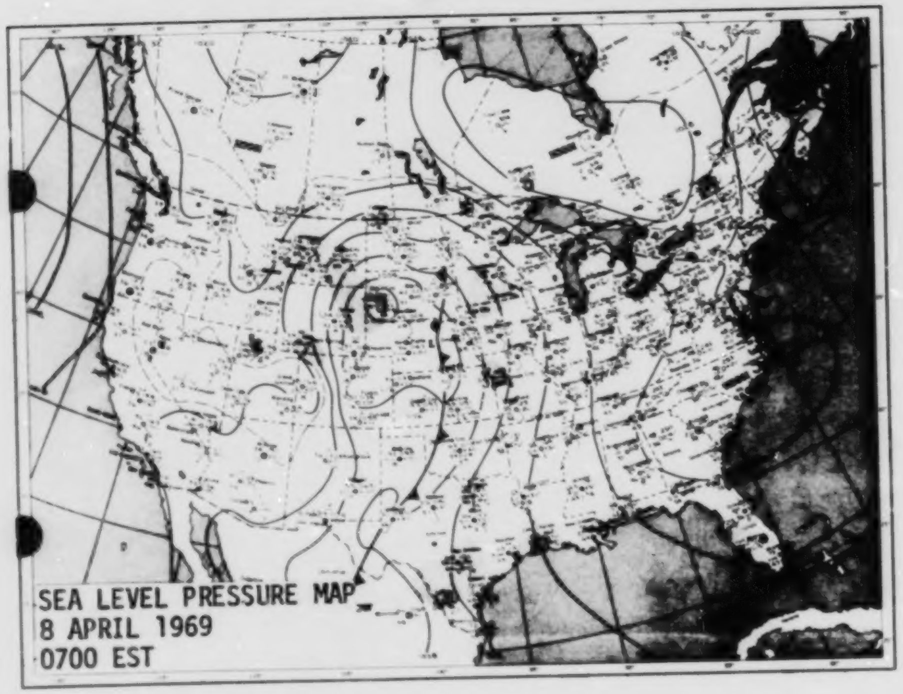
No 10- or 16-km cross sections attempted because of extreme plume width; instead, the 4 km-cross section was repeated to document plume shift. Good coverage of GLC by helicopter and bubblers. Autoanalyzer at airport office measured plume GLC.

Synoptic Situation

Regional - High centered over North Carolina dominating eastern U.S. Weak E-W front from Lake Huron through New Jersey. Surface wind light and variable. Weak 500-mb ridge from Georgia to Minnesota. Wind at 500 mb NW 15 mps.

Local - Sunrise clear with haze. Stable with inversions to 500 meters; lapse above to 1087 meters. Plume wind S 2 mps. Noon clear with haze. Near-neutral to 1088 meters. Plume wind SW 3 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
8 APRIL 1969
0700 EST

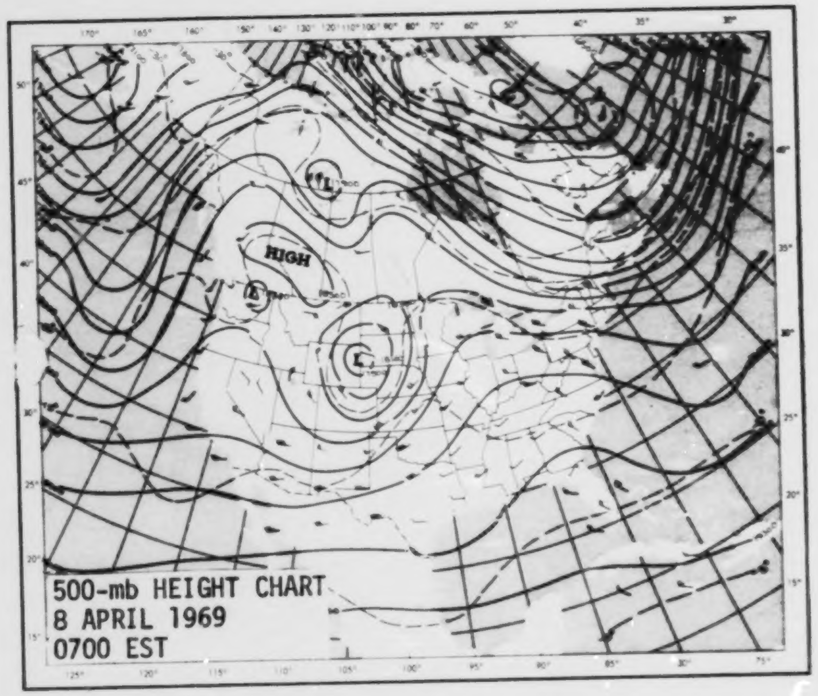

500-mb HEIGHT CHART
8 APRIL 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 9 April 1969 Keystone Plume Unit No. 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

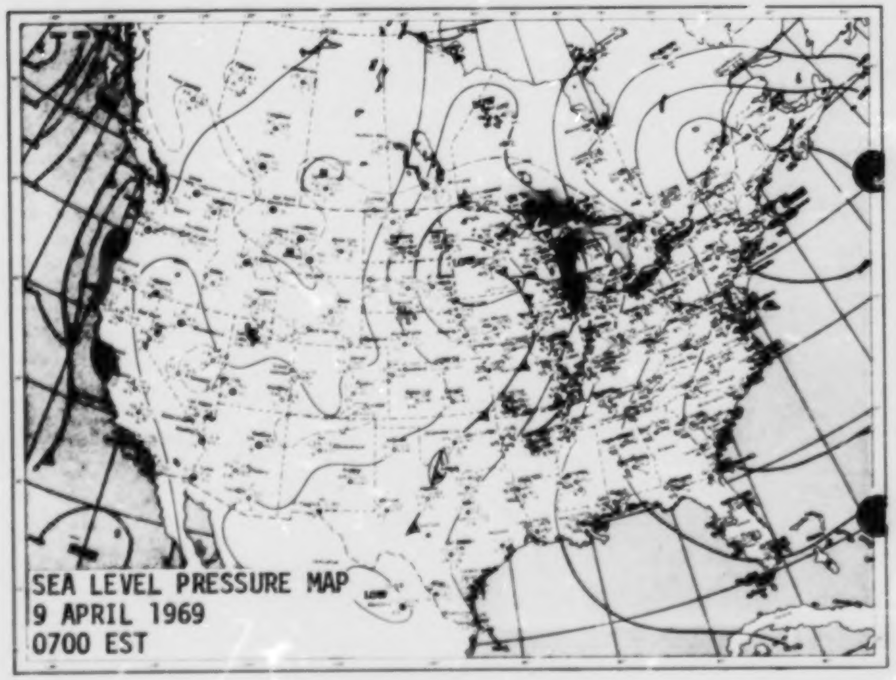
Good coverage of GLC by helicopter. Bubblers measured mostly zero GLC at distant locations from plant.

Synoptic Situation

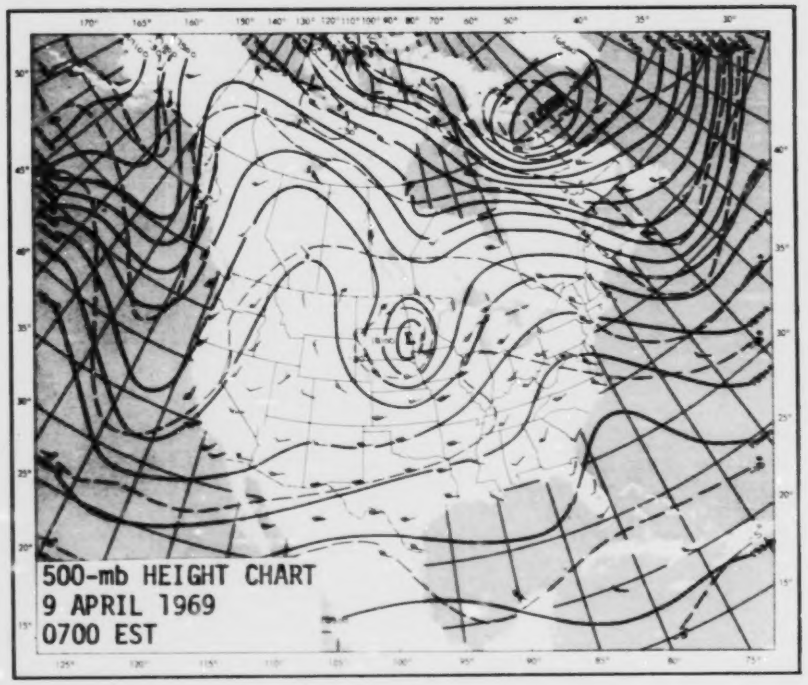
Regional - Low over Minnesota with front eastward through Maryland; ridges from Maine to James Bay and along Gulf coast. Surface wind light easterly. 500-mb ridge from Carolina coast through eastern Great Lakes. Wind at 500 mb WSW 10 mps.

Local - Sunrise high overcast with haze. Stable with inversions to 600 meters; lapse above to 1096 meters. Plume wind SE 8 mps. 2 PM scattered low and high clouds. Neutral to 1119 meters. Plume wind S 7 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
9 APRIL 1969
0700 EST



500-mb HEIGHT CHART
9 APRIL 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 10 April 1969 Keystone Plume Unit No. 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

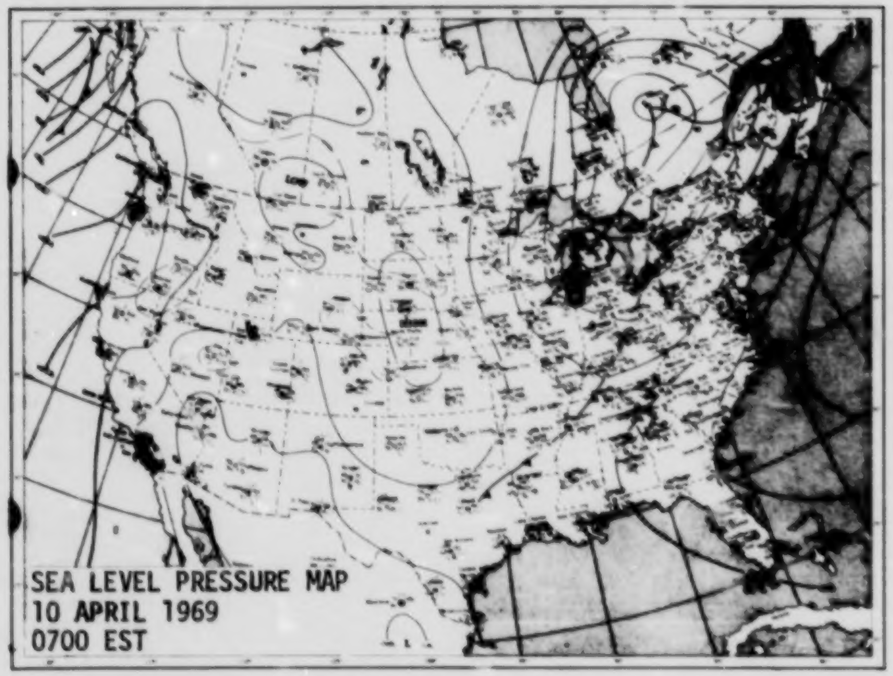
All three cross sections and morning ground-level flights made during light to moderate rainfall. 16-km cross section flown at 120-meter intervals because of low fuel. Afternoon ground-level flights discontinued because of strong low-level turbulence. Good coverage of GLC by helicopter. Bubblers missed GLC because of plume shift.

Synoptic Situation

Regional - Advancing cold front from Texas northeastward through Lake Erie; low over central Quebec. Surface wind SW 5 mps. 500-mb trough from James Bay through Missouri. Wind at 500 mb SW 25 mps.

Local - Sunrise low overcast with light to moderate rain showers. Stable to 400 meters; lapse above to 1110 meters. Plume wind SW 10 mps. 2 PM broken low clouds. Near-neutral to 743 meters. Plume wind SW 14 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
10 APRIL 1969
0700 EST

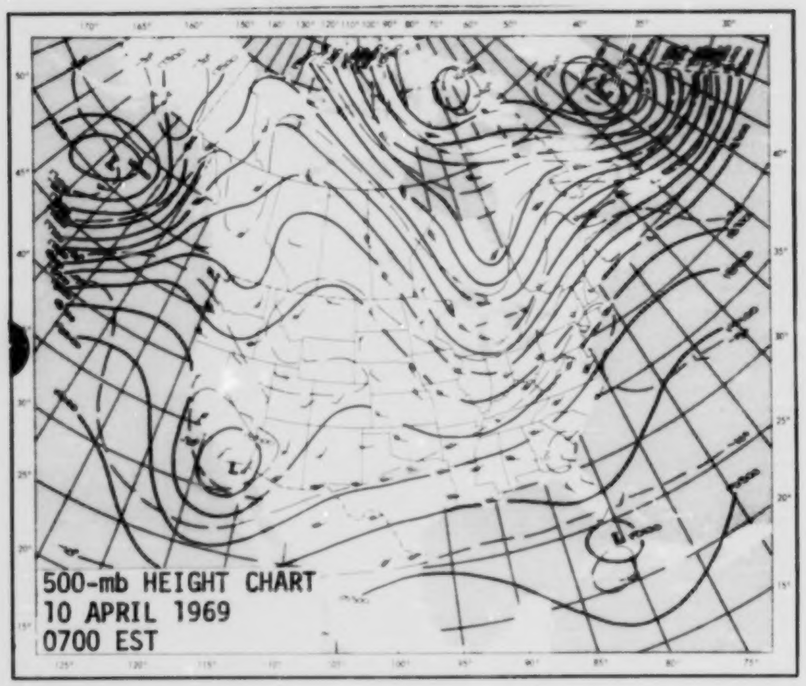

500-mb HEIGHT CHART
10 APRIL 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 11 April 1969 Keystone Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

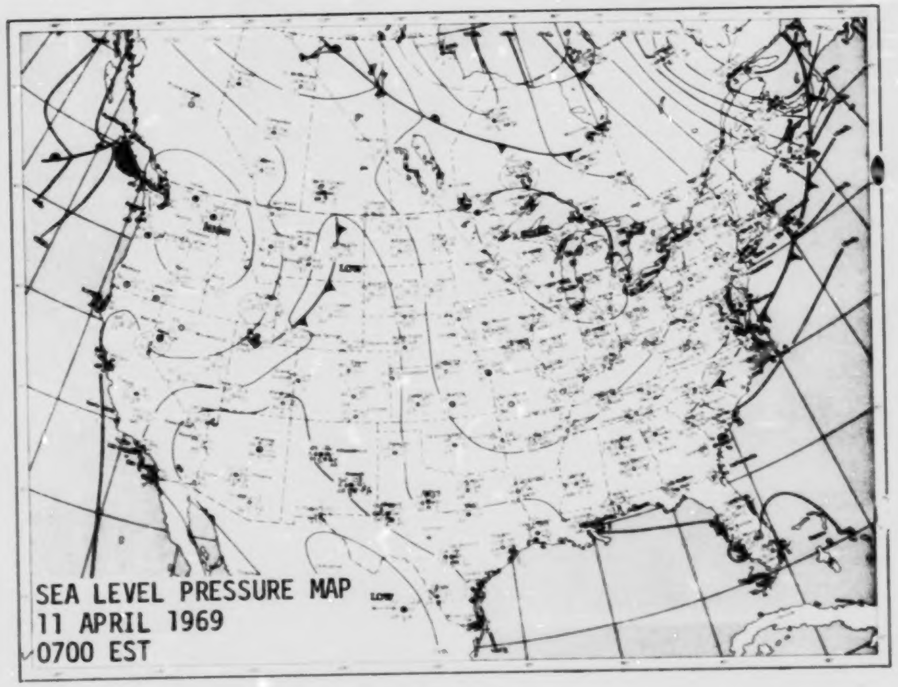
Tops of 4- and 10-km cross sections incomplete because of low clouds; 16-km cross section incomplete because of low fuel. Good coverage of GLC by helicopter. Bubblers measured mostly zero GLC at distant locations from plant. Low-altitude termination of pilot balloons caused by low clouds and steam plume interference.

Synoptic Situation

Regional - High centered over western Great Lakes dominating eastern half U.S. Surface wind light northwesterly. Long-wave 500-mb trough over eastern U.S. Wind at 500 mb WNW 20 mps.

Local - Sunrise broken low clouds. Lapse to 1095 meters. Plume wind NNW 5 mps. 2 PM clear. Neutral to 1140 meters. Plume wind NNW 5 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
11 APRIL 1969
0700 EST
LOW
LOW

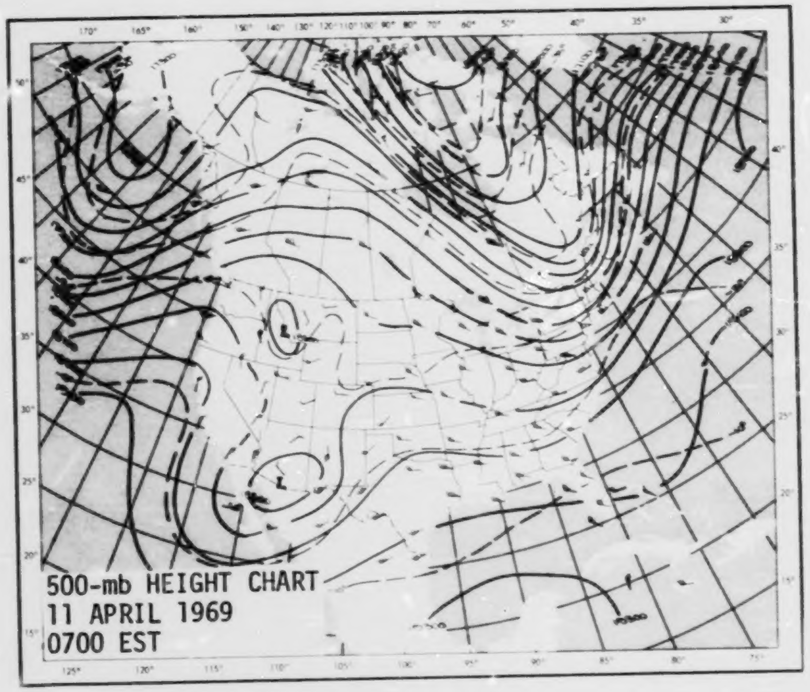

500-mb HEIGHT CHART
11 APRIL 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 12 April 1969 Keystone Plume Unit No. 1

SO2 Measurements

Plume Cross Section
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

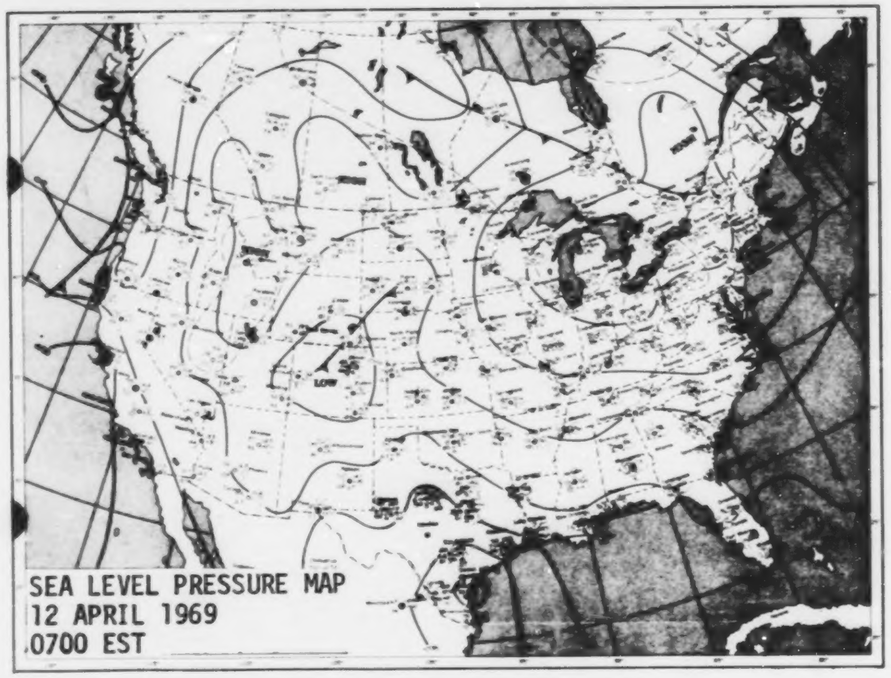
Late start caused by malfunction of helicopter instrumentation allowed time for only 16-km cross section. Good coverage of GLC by helicopter and bubblers.

Synoptic Situation

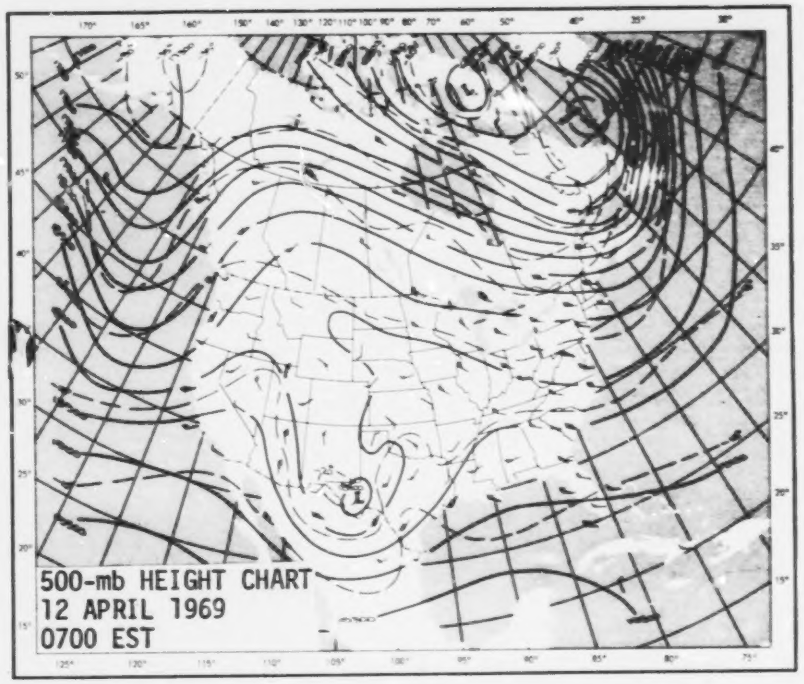
Regional - High centered over eastern Great Lakes dominating eastern half U.S. Surface wind light and variable. Two closed 500-mb lows over northeastern Canada with trough along Atlantic coast. Wind at 500 mb NW 12 mps.

Local - Sunrise scattered high clouds. Stable with inversions to 1270 meters. Plume wind ENE 4 mps. 1 PM clear. Near-neutral to 1126 meters. Plume wind E 3 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
12 APRIL 1969
0700 EST



500-mb HEIGHT CHART
12 APRIL 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 14 April 1969 Keystone Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

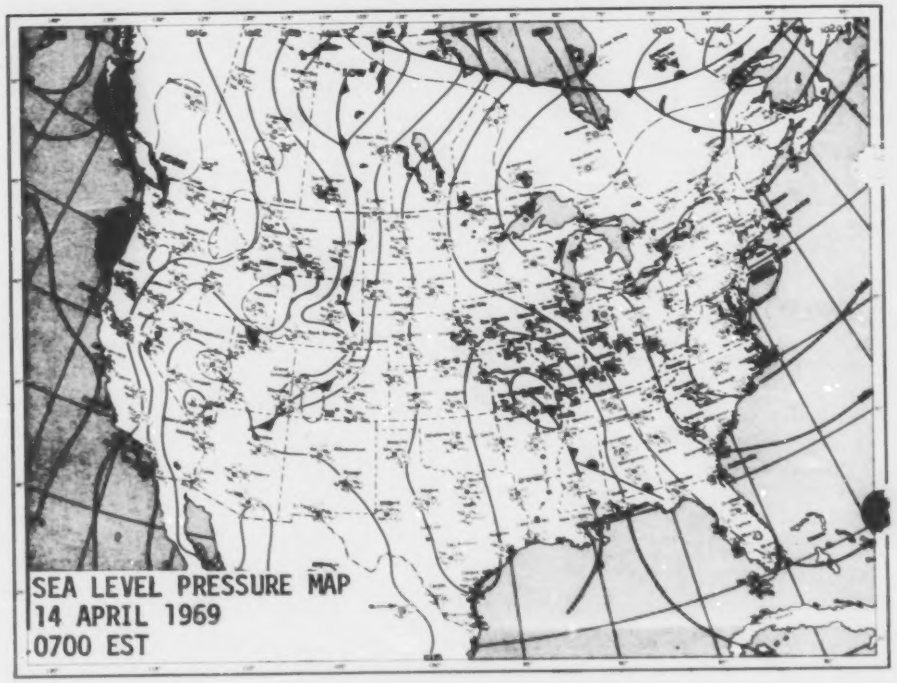
No 16-km cross section attempted to allow more time to measure GLC. 4-km cross section repeated to document plume shift. No GLC measured by helicopter or bubblers. Afternoon ground-level flight not attempted because of helicopter inspection.

Synoptic Situation

Regional - High centered off New Jersey coast with ridge across Great Lakes and southwestward to central Gulf coast; low over southern Missouri. Surface wind light southeasterly. 500-mb ridge from North Carolina coast through western Ontario. Wind at 500 mb SSW 5 mps.

Local - Sunrise middle overcast. Inversion layers to 450 meters and 823-850 meters; lapse between and above to 1100 meters. Plume wind SSE 4 mps. 1130 AM middle overcast. Near-neutral to 1200 meters; stable above to 1364 meters. Plume wind S 1 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
14 APRIL 1969
0700 EST

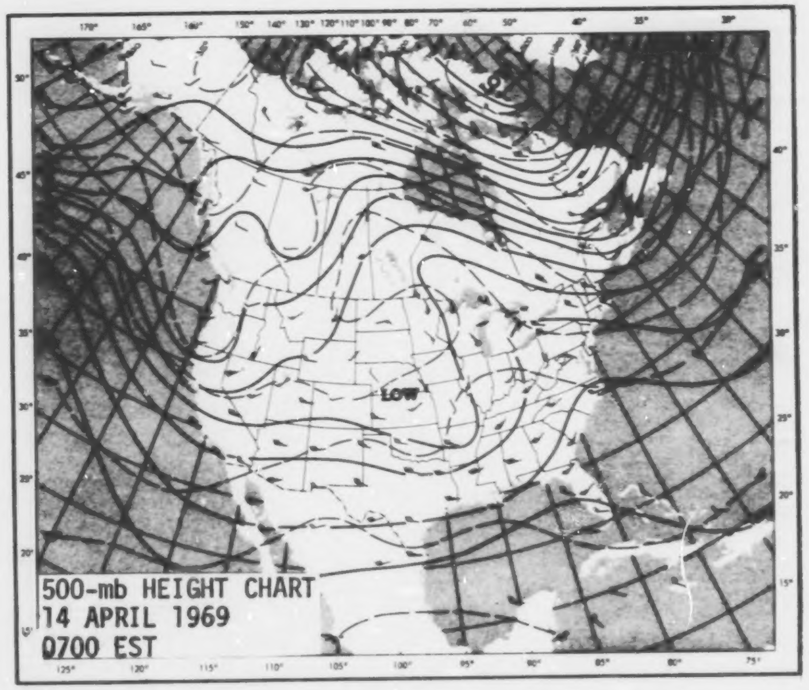

500-mb HEIGHT CHART
14 APRIL 1969
0700 EST
LOW

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 15 April 1969 Keystone Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections

On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles

Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

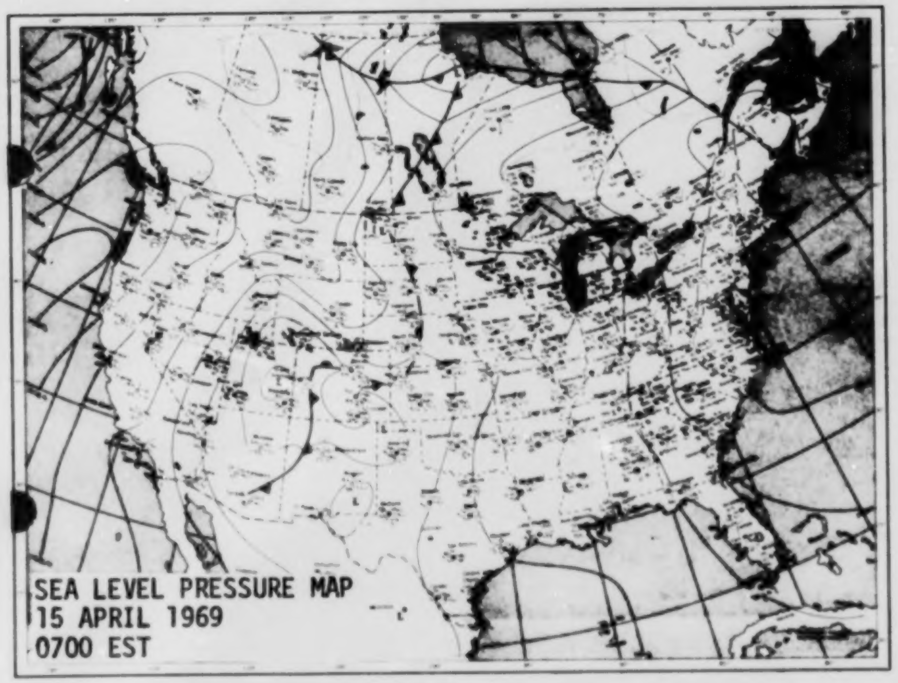
All three cross sections flown during light rain. Ground-level flight not attempted because of weather. Bubblers were not set out.

Synoptic Situation

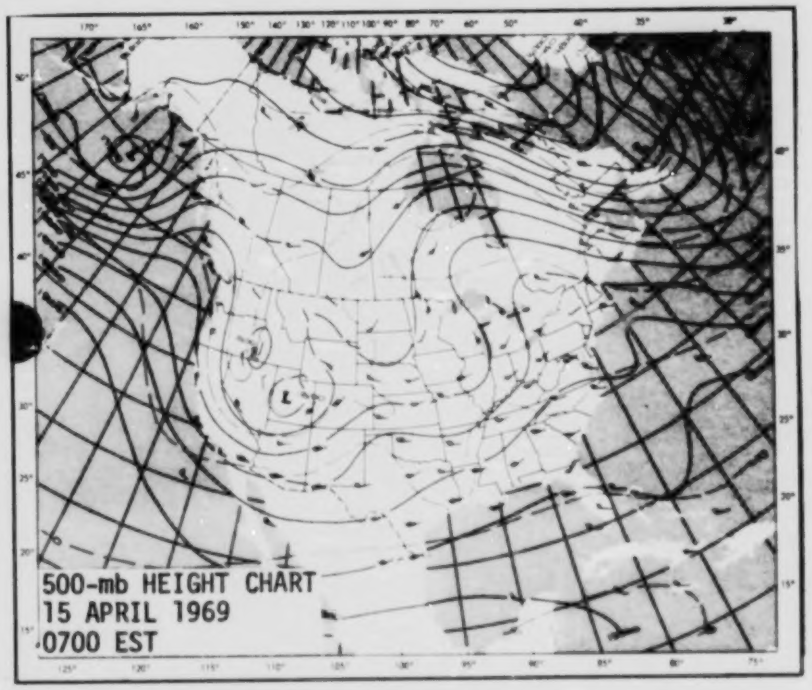
Regional - High off New England coast dominating eastern half U.S. Surface wind light southeasterly. 500-mb ridge from New England to Hudson Bay; near-zonal flow over southeast U.S. Wind at 500 mb SW 10 mps.

Local - Sunrise low overcast with light rain showers. Lapse to base of inversion at 1150 meters. Plume wind SE 5 mps. 09 AM low overcast with light rain showers. Lapse to inversion layer 350-450 meters; lapse above to base of inversion at 900 meters. Plume wind SE 6 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
15 APRIL 1969
0700 EST



500-mb HEIGHT CHART
15 APRIL 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 17 April 1969 Keystone Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

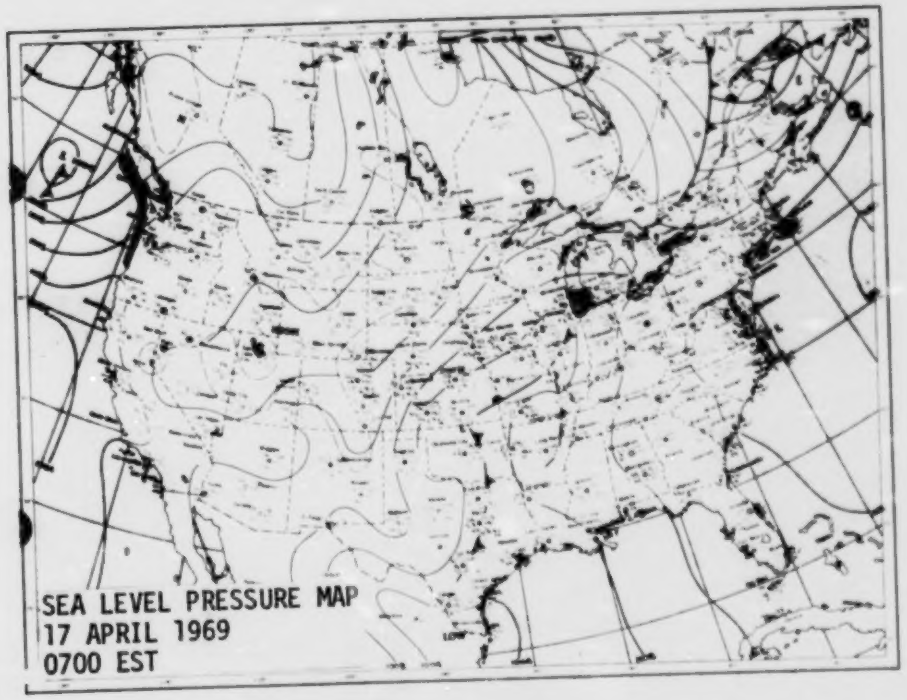
16-km cross section not completed because of low fuel. Good coverage of GLC by helicopter. Bubblers measured some GLC at distant locations from plant.

Synoptic Situation

Regional - Low over Kansas-Oklahoma border with frontal trough to Lake Erie; W-E ridge over southeast U.S. Surface wind near calm. Near-zonal flow over northeastern U.S.; closed low over Kansas. Wind at 500 mb W 15 mps.

Local - Sunrise scattered high clouds with fog. Stable with inversions to 350 meters and 700-850 meters; lapse between and above to 1109 meters. Plume wind SSW 8 mps. 11 AM clear. Neutral to 1100 meters. Plume wind SSW 6 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
17 APRIL 1969
0700 EST

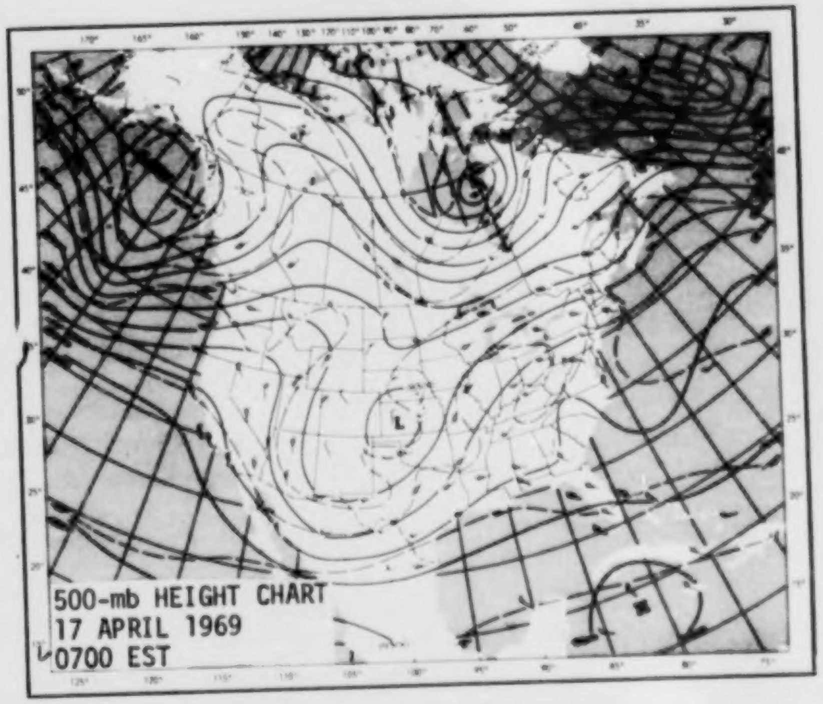

500-mb HEIGHT CHART
17 APRIL 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 18 April 1969 Keystone Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

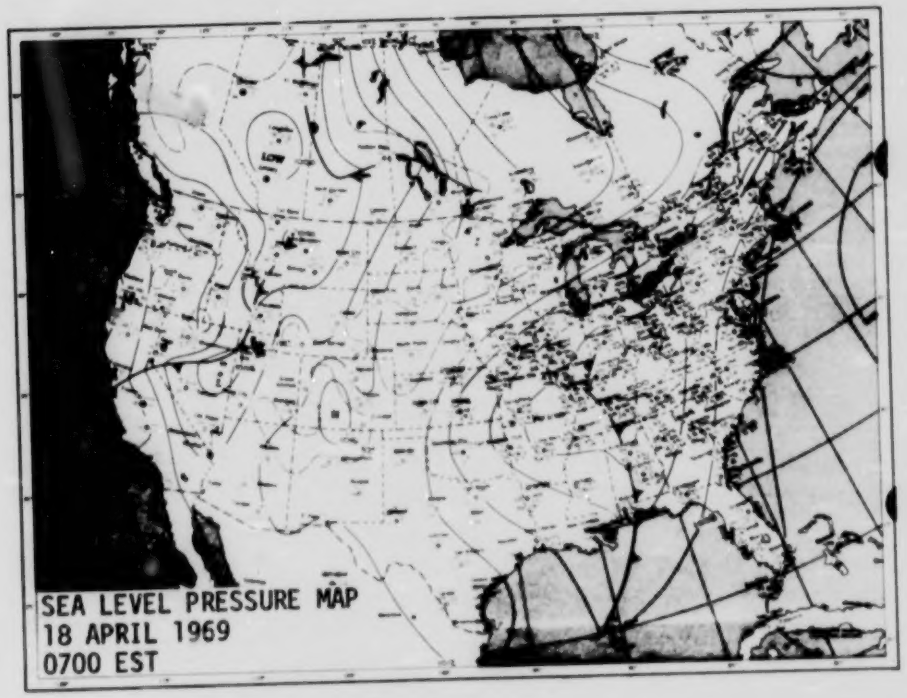
16-km cross section flown during light rain. Ground-level flights discontinued because of weather. Bubblers were not set out.

Synoptic Situation

Regional - Low over southern Illinois with frontal trough northeastward through Maine. Surface wind light and variable. Eastern U.S. under leading edge of trough formed by closed 500-mb low over Missouri. Wind at 500 mb WSW 15 mps.

Local - Sunrise low broken, middle overcast; light rain beginning 08 AM. Surface inversion to 100 meters; lapse above to 1080 meters. Plume wind SW 3 mps. 10 AM low overcast with light rain. Surface inversion to 110 meters; lapse above to 1095 meters. Plume wind SW 4 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
18 APRIL 1969
0700 EST

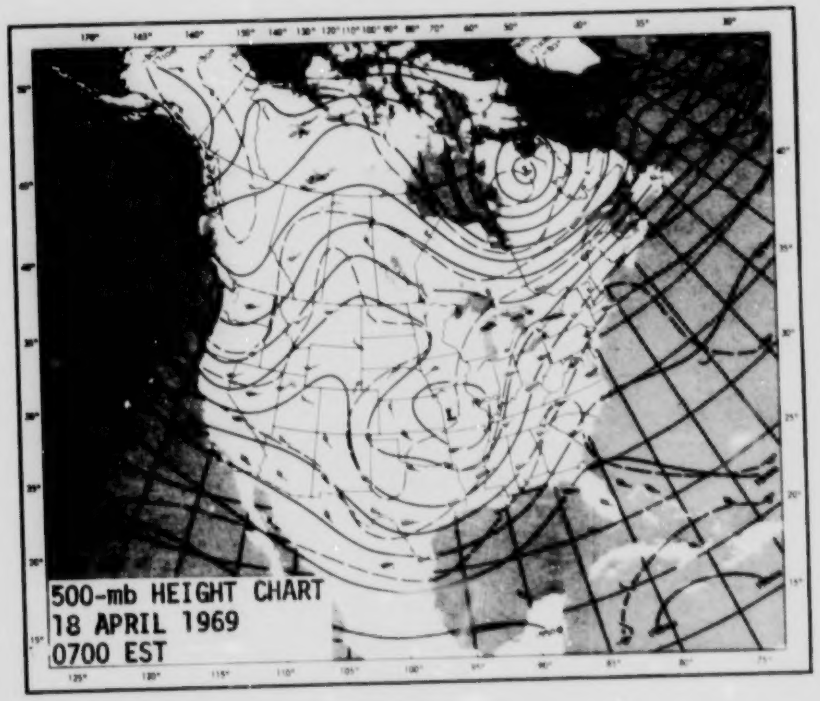

500-mb HEIGHT CHART
18 APRIL 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 28 April 1969 Keystone Plume Unit No. 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

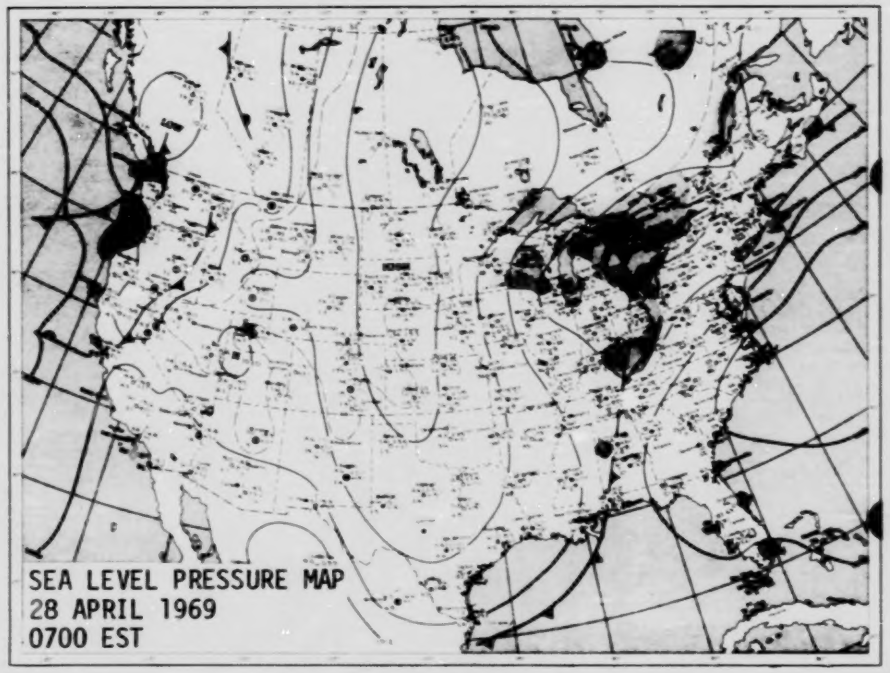
Partial coverage of GLC by helicopter and bubblers. Ground-level flights made during light rain. Bubblers picked up after two hours because of weather. Afternoon radiosonde not released.

Synoptic Situation

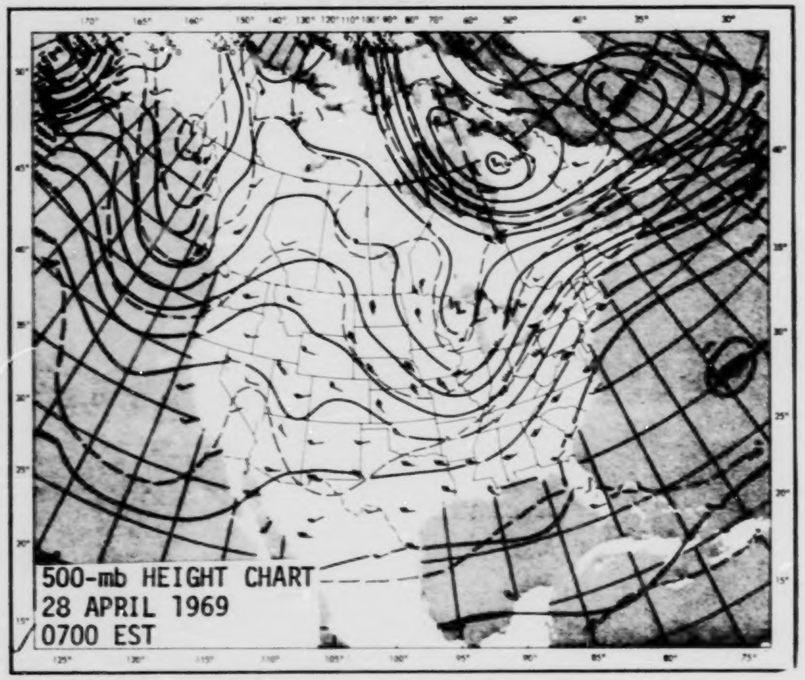
Regional - Low over eastern Great Lakes with fronts southward to Alabama and eastward to Nova Scotia. Surface wind SSW 5 mps. 500-mb low over Lake Superior with trough southward to Arkansas. Wind at 500 mb SW 30 mps.

Local - Sunrise scattered high clouds with haze; light rain beginning 09 AM. Stable with inversions to 450 meters; lapse above to 1100 meters. Plume wind SSW 12 mps. 1030 AM low overcast with rain showers. Stable to 821 meters. Plume wind SSW 7 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
28 APRIL 1969
0700 EST



500-mb HEIGHT CHART
28 APRIL 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 30 April 1969 Keystone Plume Units No. 1 and 2

SO2 Measurements

Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

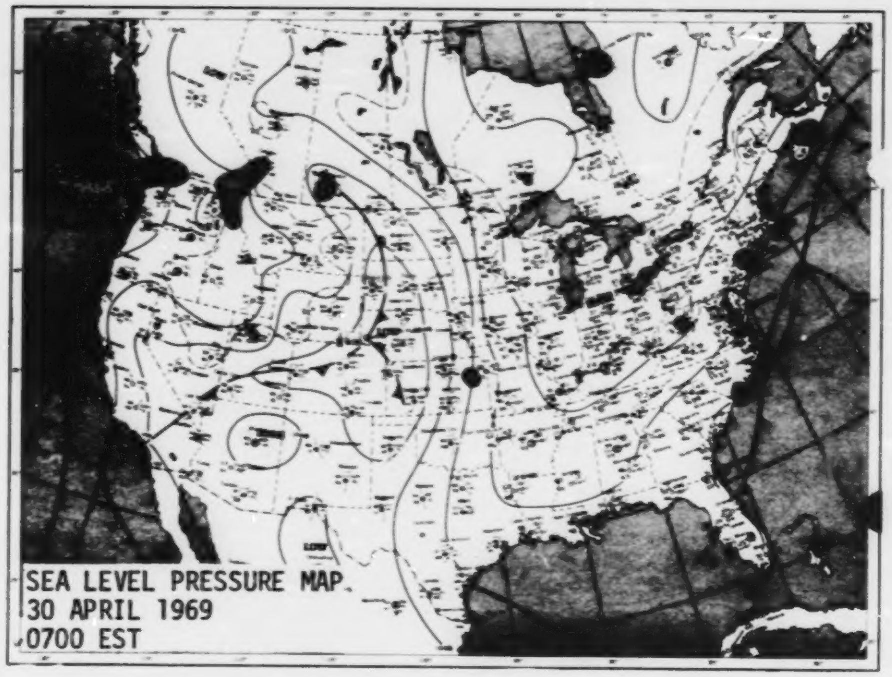
No cross sections attempted because of low clouds and steam plume interference. Good coverage of GLC by helicopter; partial coverage by bubblers. Bubblers picked up after two hours because of plume shift. Low-altitude termination of pilot balloon runs caused by low clouds and steam plume interference.

Synoptic Situation

Regional - High centered over Great Lakes with ridge southward to Texas coast. Surface wind N 5 mps. 500-mb trough from Lake Ontario to Florida Atlantic coast. Wind at 500 mb NW 12 mps.

Local - Sunrise broken to overcast low clouds. Stable 500-700 meters; lapse below and above to 1100 meters. Plume wind NNE 5 mps. 11 AM scattered low clouds. Near-neutral to 1119 meters. Plume wind ENE 2 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
30 APRIL 1969
0700 EST

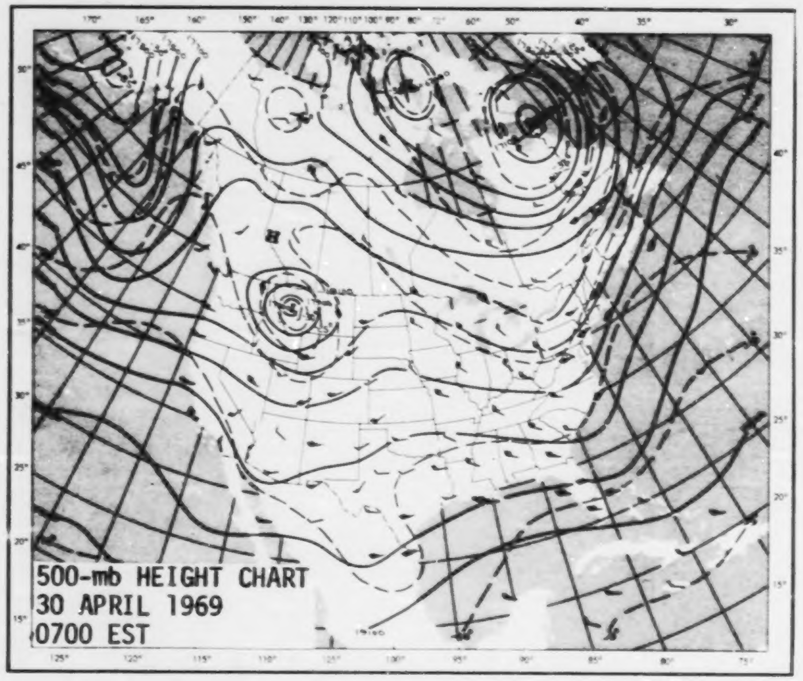

500-mb HEIGHT CHART
30 APRIL 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 1 May 1969 Keystone Plume Units No. 1 and 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

Brookhaven National Laboratory (plume isotopic ratio measurements)

Commentary

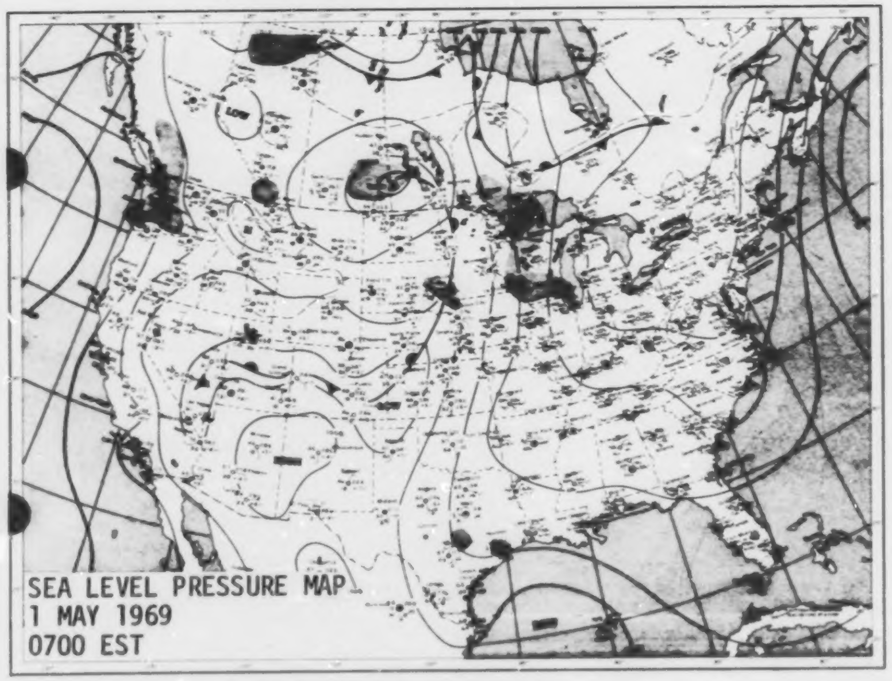
Extremely wide plume. Good coverage of GLC by helicopter and bubblers. GLC pattern at 4-km covered arc of about 135° around stacks.

Synoptic Situation

Regional - High over Lake Ontario with ridges southwestward to Texas and southward to Florida coast. Surface wind light and variable. 500-mb trough from Quebec southward. Wind at 500 mb NW 12 mps.

Local - Sunrise clear. Stable with inversions to 1160 meters. Plume wind ESE 7 mps. 1130 AM scattered low clouds. Near-neutral to 1120 meters. Plume wind WSW 2 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
1 MAY 1969
0700 EST

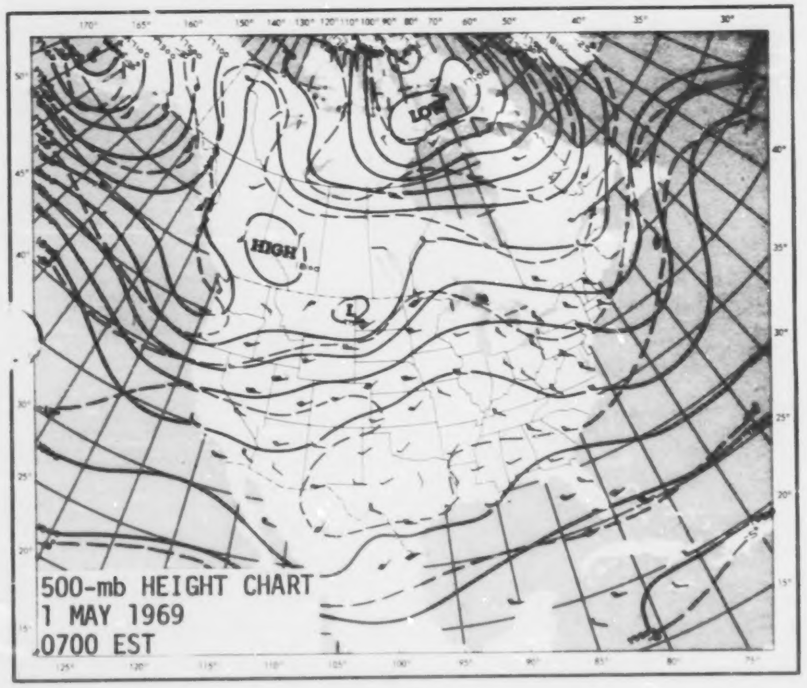

500-mb HEIGHT CHART
1 MAY 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 2 May 1969 Keystone Plume Units No. 1 and 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

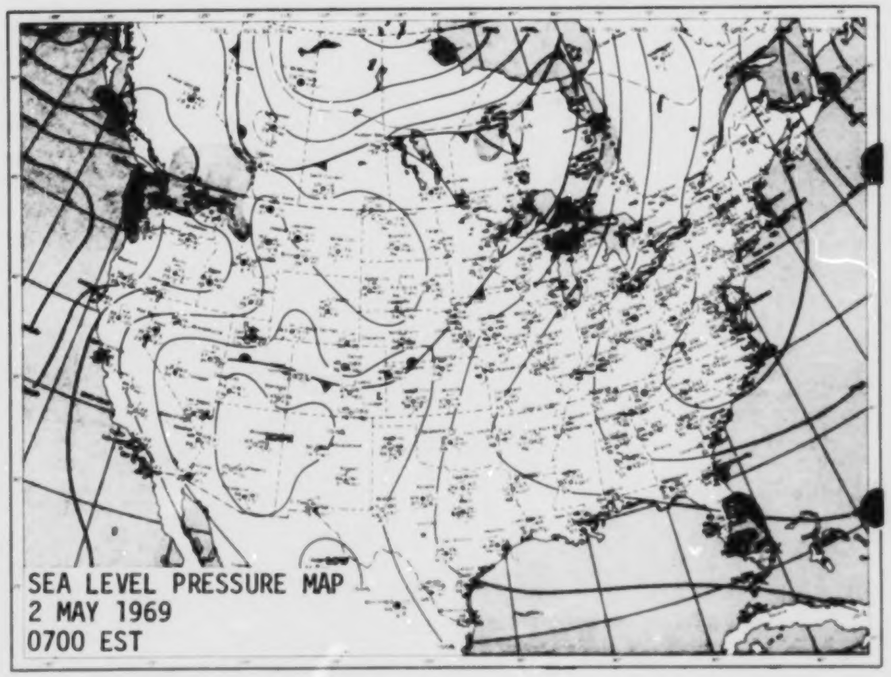
Extremely wide plume. 16-km cross section flown at 120-meter intervals because of low fuel. Good coverage of GLC by helicopter and bubblers. Bubbler measurements near zero because of extremely wide plume. GLC pattern at 4-km covered arc of about 75° around stacks.

Synoptic Situation

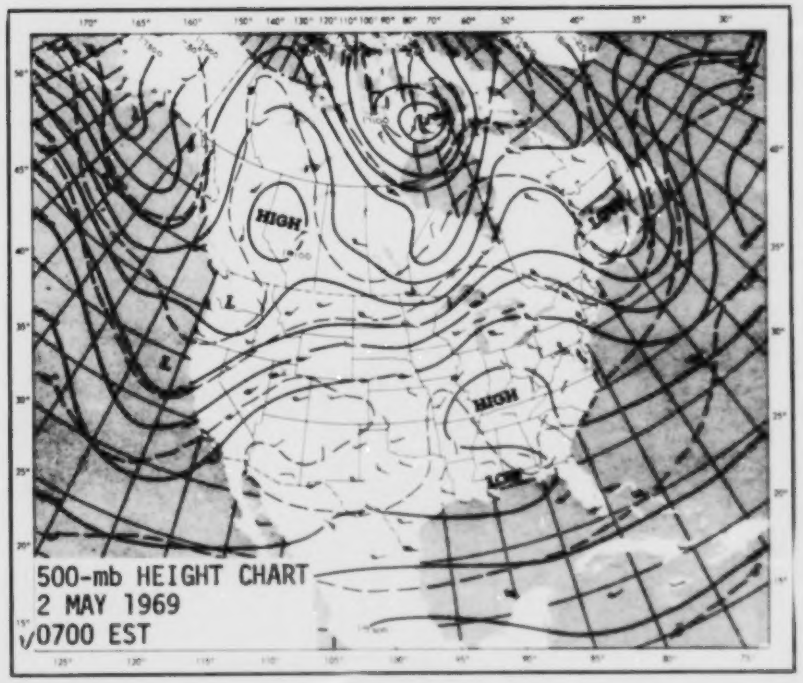
Regional - High centered along New England coast with ridge from North Carolina to Texas. Surface wind light and variable. 500-mb high over Kentucky and Tennessee with weak gradient over northeastern U.S. Wind at 500 mb NW 8 mps.

Local - Sunrise clear. Stable with inversions to 750 meters; lapse above to 1123 meters. Plume wind SSW 4 mps. 11 AM clear. Slight inversion at 1000 meters; neutral below and above to 1125 meters. Plume wind SSW 4 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
2 MAY 1969
0700 EST



500-mb HEIGHT CHART
2 MAY 1969
0700 EST

HIGH
L
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HIGH
LOW

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 3 May 1969 Keystone Plume Units No. 1 and 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

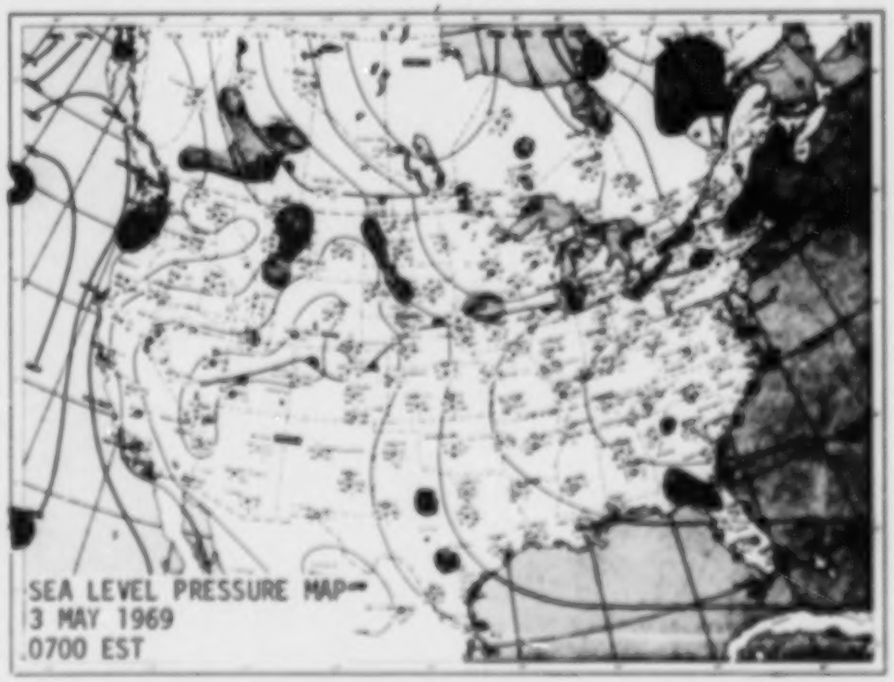
Extremely wide plume. Good coverage of GLC by helicopter and bubblers. Ground-level flights discontinued because of defective recorder. Autoanalyzer at airport office measured plume GLC.

Synoptic Situation

Regional - E-W ridge from high off Hatteras to northern Texas. Cold front from southern Quebec through southern Lake Michigan. Surface wind W 5 mps. 500-mb low over southeastern U.S. with zonal flow over northeastern U.S. Wind at 500 mb W 15 mps.

Local - Sunrise scattered high clouds with haze. Surface inversion to 500 meters; lapse above to 1274 meters. Plume wind WSW 8 mps. 10 AM clear with haze. Near-neutral to 1100 meters. Plume wind W 7 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
3 MAY 1969
0700 EST

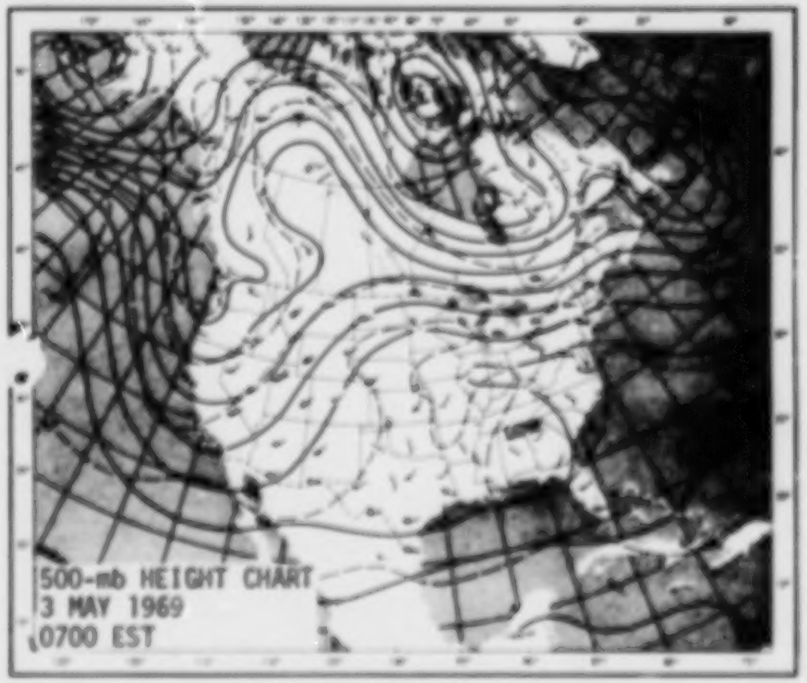

500-mb HEIGHT CHART
3 MAY 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 5 May 1969 Keystone Plume Units No. 1 and 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

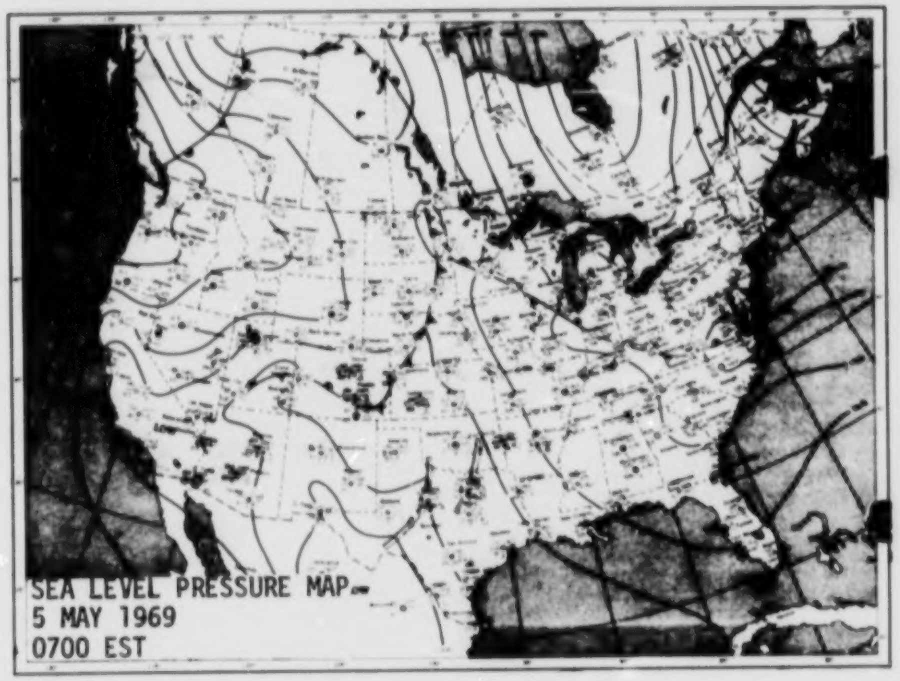
16-km cross section reflects shifting wind direction. Good coverage of GLC by helicopter. Bubblers picked up after 1 hour because of plume shift.

Synoptic Situation

Regional - Ridge from James Bay to New Jersey coast; weak front from Virginia to Minnesota. Surface wind near calm. 500-mb ridge from western Great Lakes to Hudson Bay; weak gradient over eastern U.S. Wind at 500 mb NW 15 mps.

Local - Sunrise scattered high clouds. Stable with inversions to 990 meters; lapse above to 1150 meters. Plume wind E 8 mps. 01 PM clear. Neutral to 1129 meters. Plume wind NE 2 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
5 MAY 1969
0700 EST

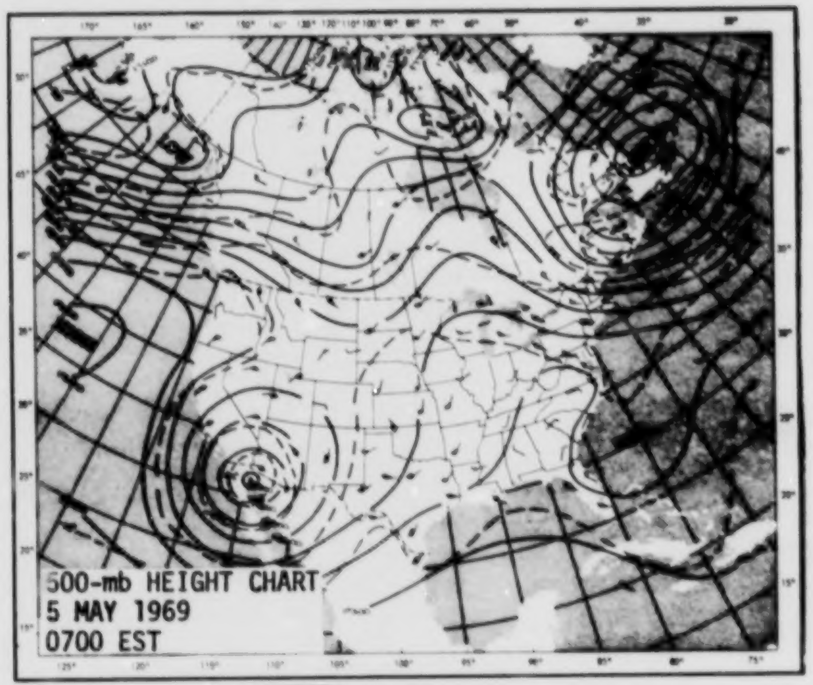

500-mb HEIGHT CHART
5 MAY 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 6 May 1969 Keystone Plume Units No. 1 and 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

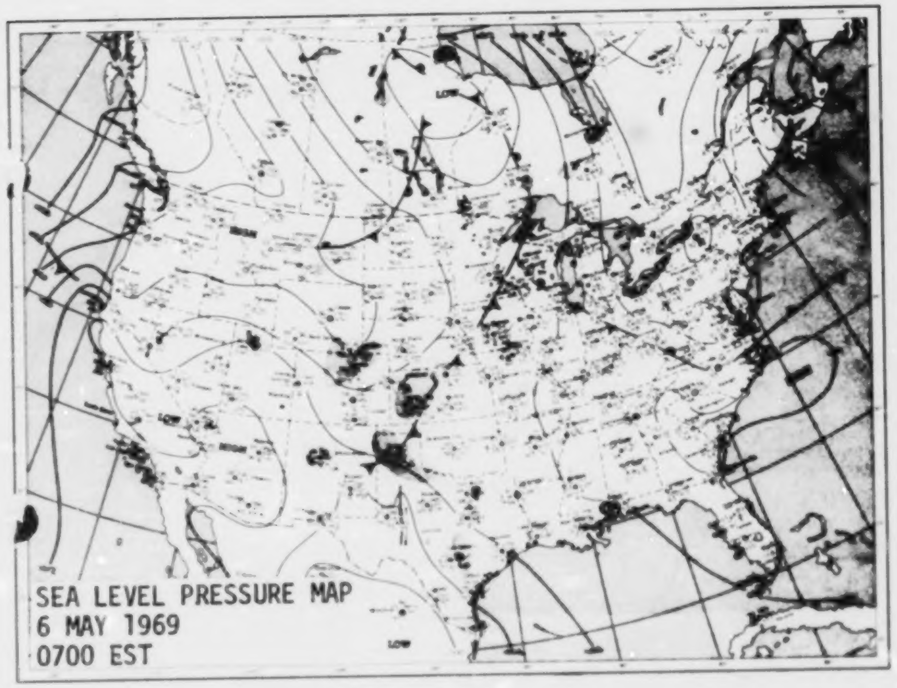
No 16-km cross section attempted because of extreme plume width. Good coverage of GLC by helicopter. Bubblers set out too early to measure GLC.

Synoptic Situation

Regional - High over central New York with ridge to Virginia; weak front from Wisconsin through North Carolina. Surface wind light and variable. 500-mb ridge from Ohio Valley past James Bay; weak gradient over eastern U.S. Wind at 500 mb NW 10 mps.

Local - Sunrise clear. Stable with inversions to 600 meters; lapse above to 1110 meters. Plume wind E 5 mps. 1 PM clear. Neutral to 1150 meters. Plume wind NE 3 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
6 MAY 1969
0700 EST

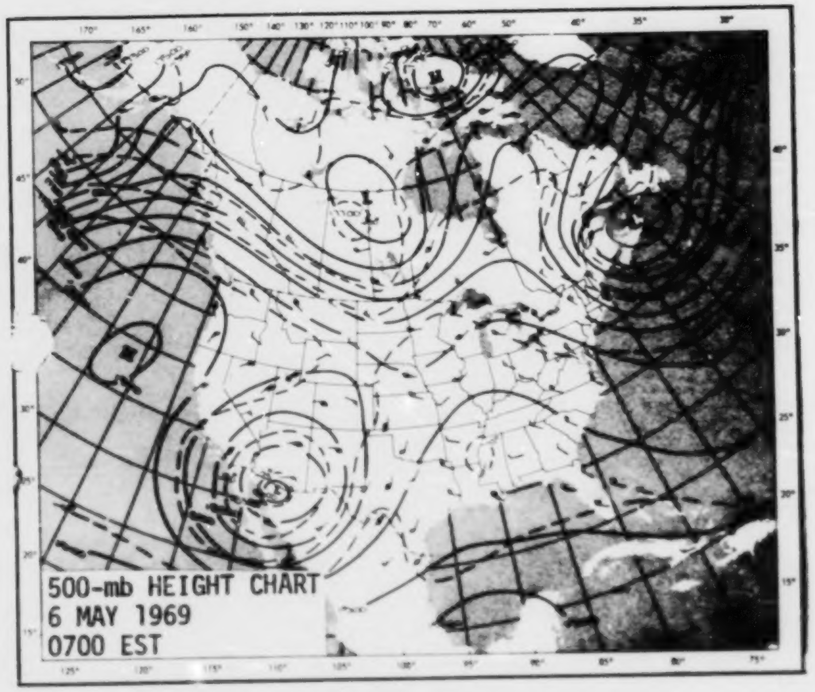

500-mb HEIGHT CHART
6 MAY 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 7 May 1969 Keystone Plume Units No. 1 and 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

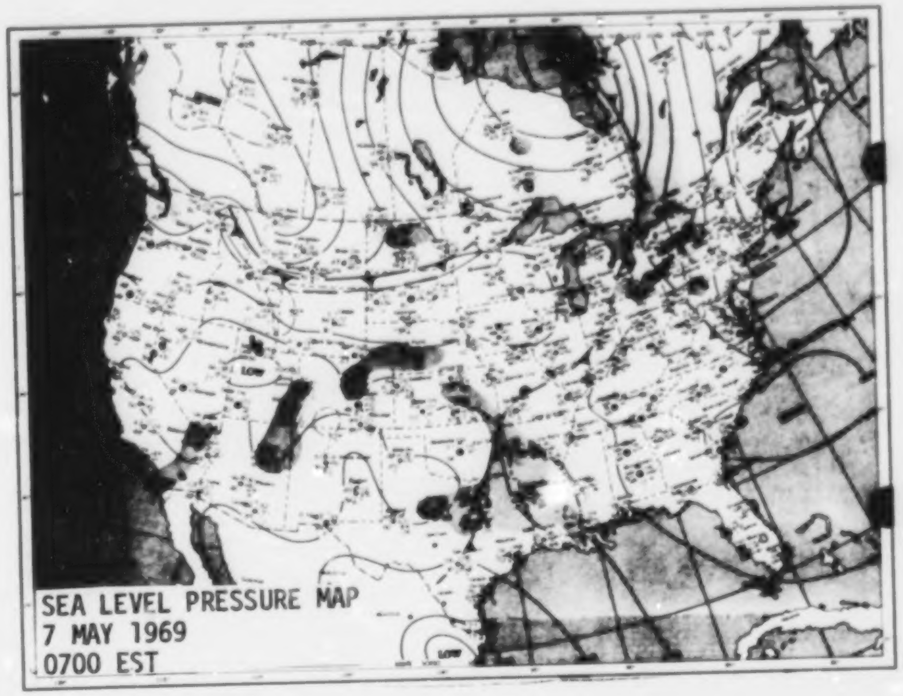
Extremely wide plume. 16-km cross section incomplete because of low fuel. Good coverage of GLC by helicopter and bubblers. Ground-level flights discontinued because of defective recorder.

Synoptic Situation

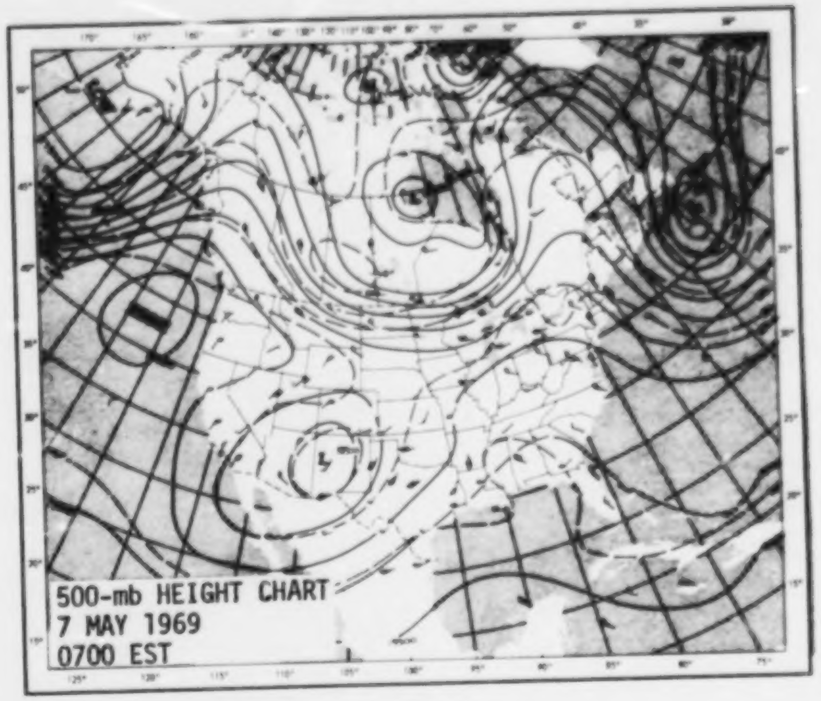
Regional - Low over Hudson Bay with weak fronts through Lake Huron to Missouri and Lake Huron to North Carolina. High over Maine with ridge along New England coast. Surface wind light southerly. NE-SW 500 mb ridge over eastern U.S. Wind at 500 mb NW 10 mps.

Local - Sunrise middle overcast with haze. Stable with inversions to 450 meters; lapse above to 1110 meters. Plume wind SE 2 mps. Noon scattered low clouds with haze. Neutral to 1117 meters. Plume wind SSW 2 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
7 MAY 1969
0700 EST



500-mb HEIGHT CHART
7 MAY 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 8 May 1969 Keystone Plume Units No. 1 and 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles
Airport Surface Data

Other Participants

None

Commentary

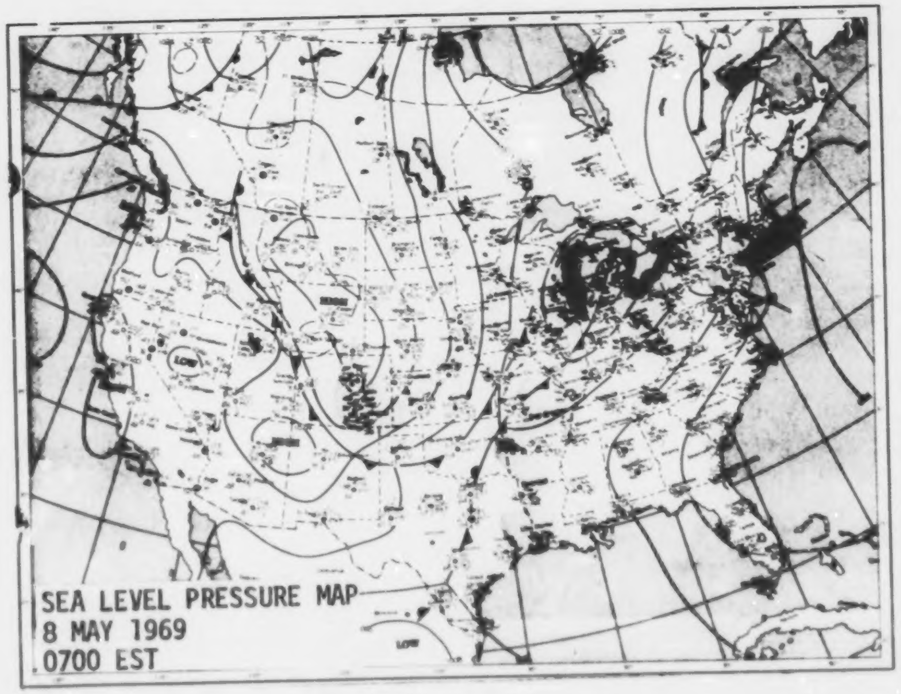
No 16-km cross section attempted because of extreme plume width; 10-km cross section flown during light rain. Morning ground-level flights discontinued because of weather; partial coverage of afternoon GLC by helicopter. Bubblers were not set out. Pilot balloons and afternoon radiosonde not released because of weather.

Synoptic Situation

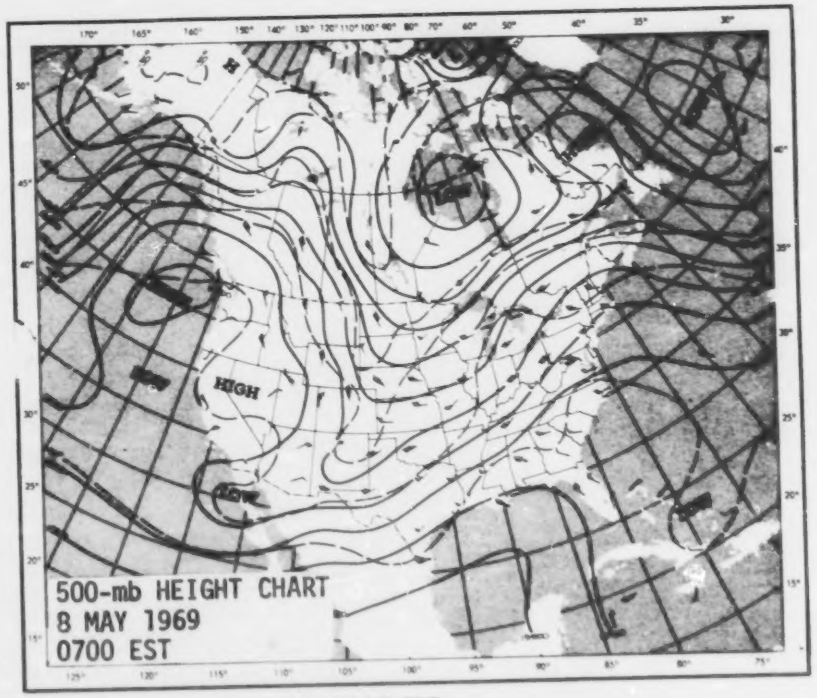
Regional - Closed low over Michigan with warm front through New Jersey and cold front southwestward to Texas. Surface wind SW 5 mps. Long-wave 500-mb ridge along New England coast. Wind at 500 mb SW 20 mps.

Local - Sunrise low broken and middle overcast; light rain showers beginning at 07 AM. Stable with inversions to 700 meters; lapse above to 1170 meters. Plume wind (from radiosonde) SSE 5 mps. Noon broken low clouds. Near-neutral to 700 meters. Plume wind not available.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
8 MAY 1969
0700 EST



500-mb HEIGHT CHART
8 MAY 1969
0700 EST

HIGH
LOW
LOW

Table 1. (continued) DAILY EXPERIMENT SUMMARY

April 1969 Series 9 May 1969 Keystone Plume Units No. 1 and 2

SO2 Measurements

Helicopter Peak GLC
Helicopter Instantaneous GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profile
Airport Surface Data

Other Participants

None

Commentary

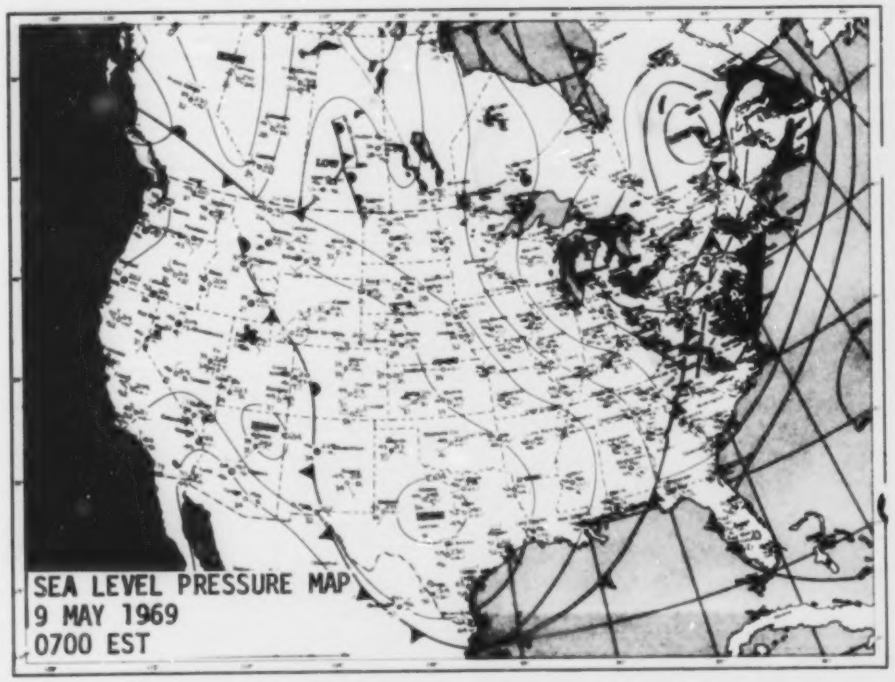
No cross sections attempted because of low clouds, rain, and fog. Morning and afternoon flights conducted to measure GLC. Afternoon ground-level flight discontinued because of strong low-level turbulence (surface gusts to 12 mps). Bubblers were not set out. Pilot balloons and afternoon radiosonde not released because of weather.

Synoptic Situation

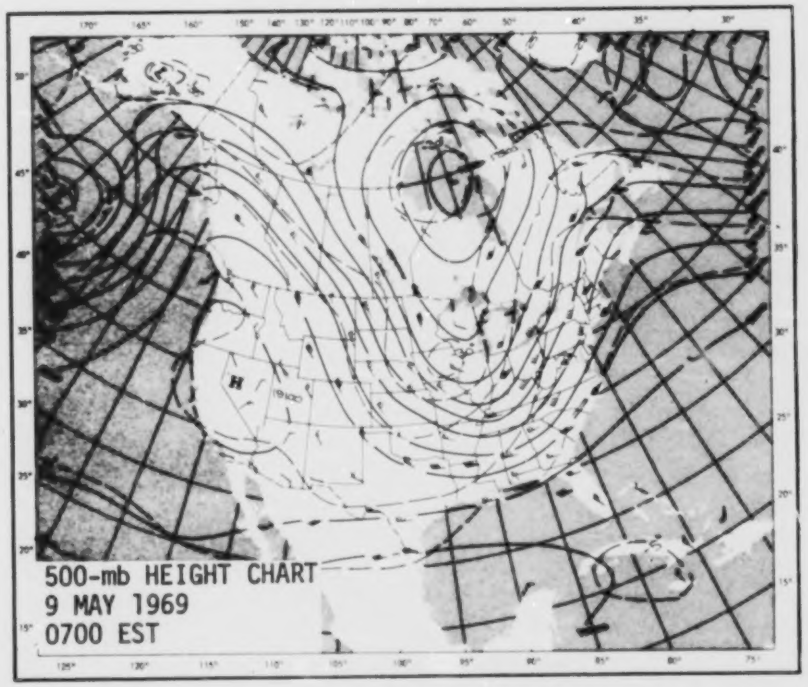
Regional - Low over Quebec with front southward through Pennsylvania to Georgia. Surface wind SW 5 mps. Closed 500-mb low over Hudson Bay with trough southward to Gulf coast. Wind at 500 mb SW 30 mps.

Local - Sunrise low overcast with light rain showers and fog. Neutral to 417 meters. Plume wind (from radiosonde) SW 6 mps. 1 PM broken low clouds. No afternoon temperature profile or plume wind available.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
9 MAY 1969
0700 EST



500-mb HEIGHT CHART
9 MAY 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 9 October 1969 Keystone Plume Unit No. 2

SO$_2$ Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

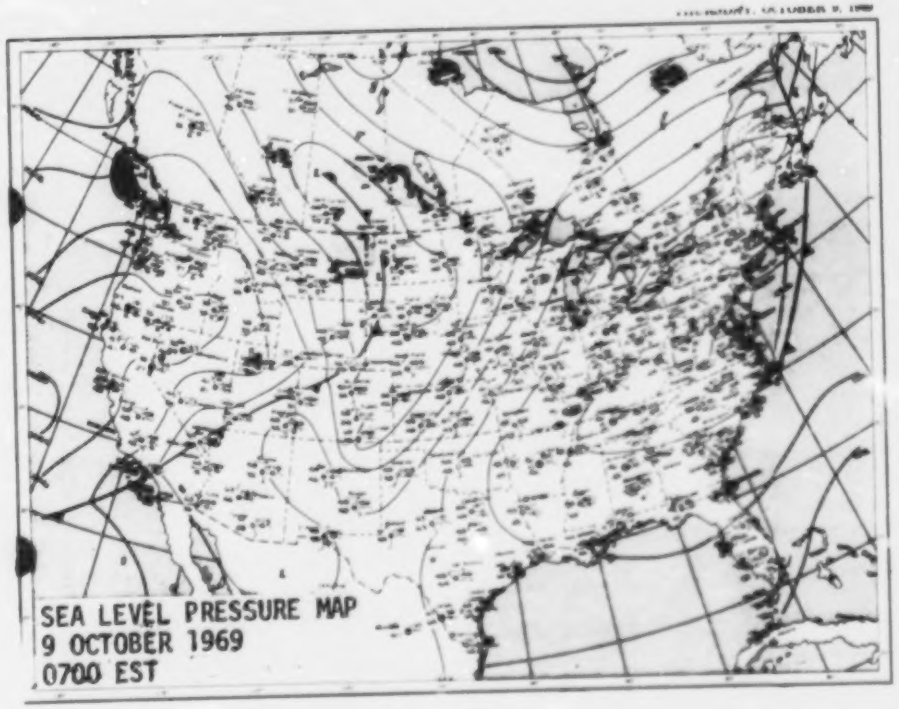
Good coverage of GLC by bubblers. Ground-level helicopter flights discontinued to conserve contract time for sampling Homer City plume.

Synoptic Situation

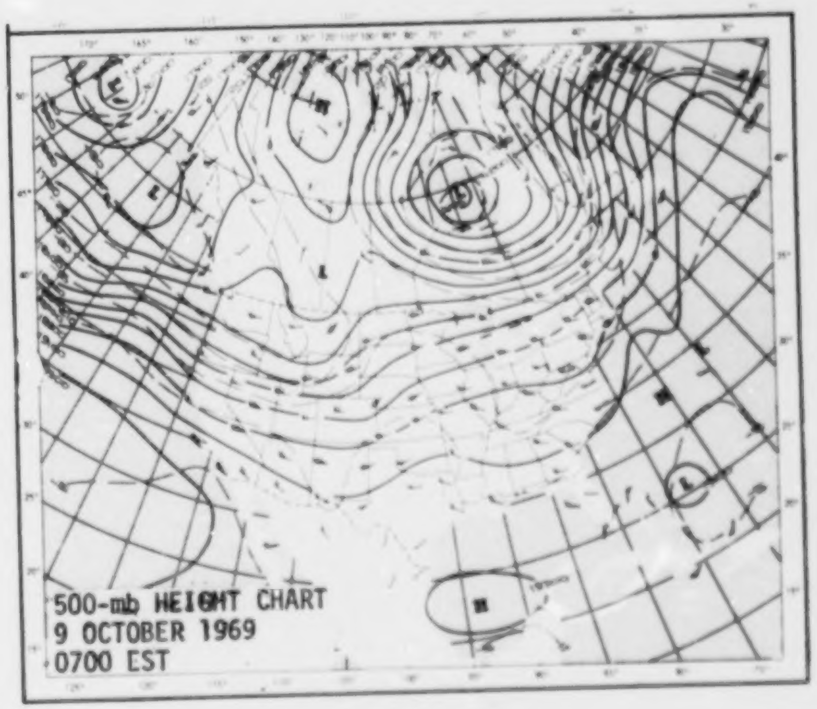
Regional - High centered over West Virginia dominating eastern half U.S. Surface wind light and variable. Closed 500-mb low over Hudson Bay; zonal flow over eastern U.S. Wind at 500 mb W 7 mps.

Local - Sunrise clear with fog. Stable with inversions to 450 meters; lapse above to 1105 meters. Plume wind NE 7 mps. 1030 AM clear. Near-neutral to 1100 meters. Plume wind SSW 6 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
9 OCTOBER 1969
0700 EST



500-mb HEIGHT CHART
9 OCTOBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 10 October 1969 Keystone Plume Unit No. 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

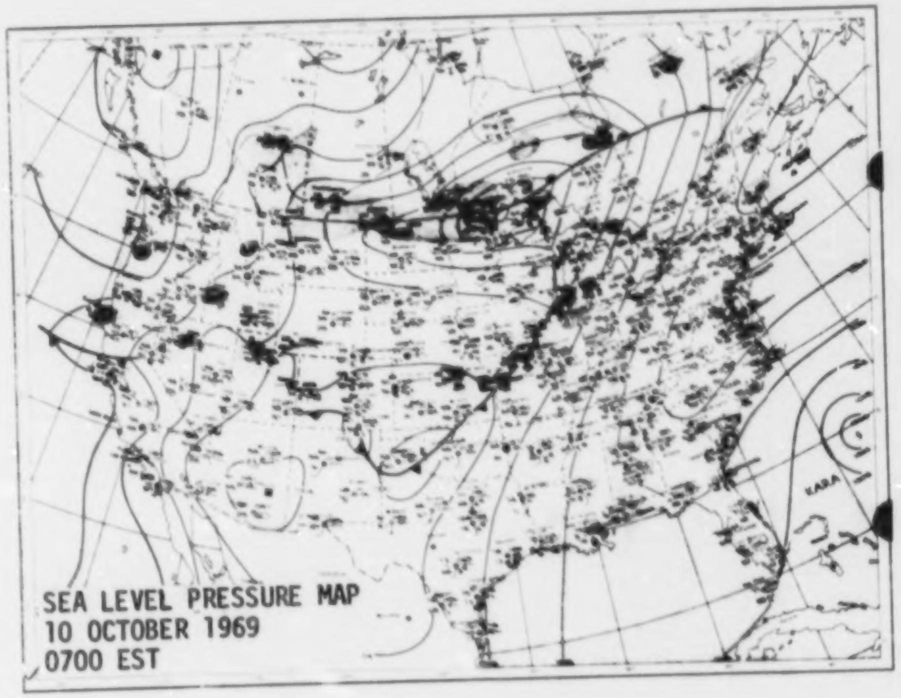
Extremely wide plume. Good coverage of GLC by bubblers. Ground-level helicopter flights discontinued to conserve contract time for sampling Homer City plume.

Synoptic Situation

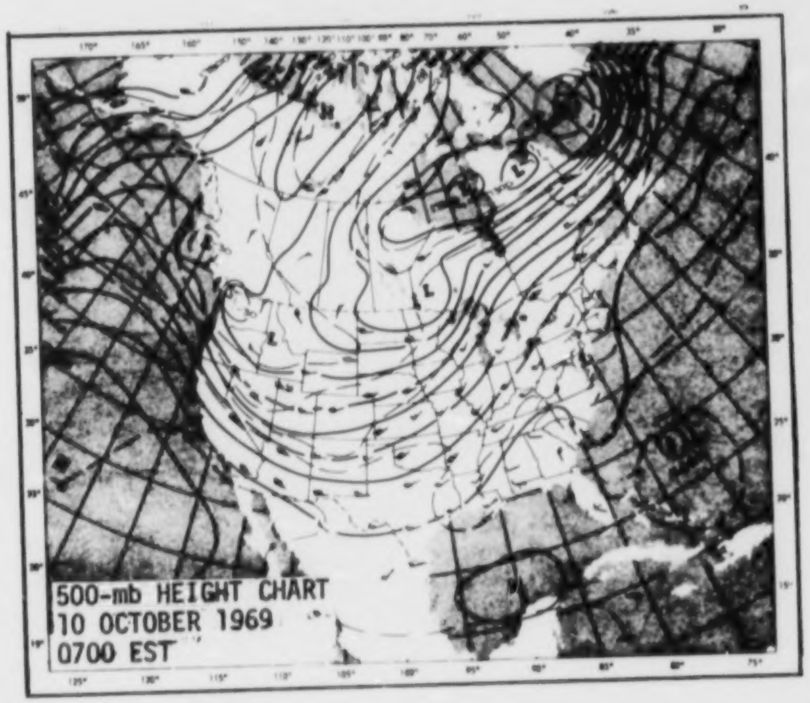
Regional - Low near Lake Superior with cold front southwestward; ridge over Atlantic coastal states. Tropical storm Kara off Florida coast. Surface wind light southeasterly. Weak 500-mb low over Maryland with trough to South Carolina coast. Wind at 500 mb SW 10 mps.

Local - Sunrise scattered high clouds with fog. Surface inversion to 550 meters; lapse above to 1093 meters. Plume wind SSE 7 mps. 10 AM clear. Stable with inversions 500-650 meters; neutral below and lapse above to 1100 meters. Plume wind SSW 5 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
10 OCTOBER 1969
0700 EST



500-mb HEIGHT CHART
10 OCTOBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 11 October 1969 Homer City Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

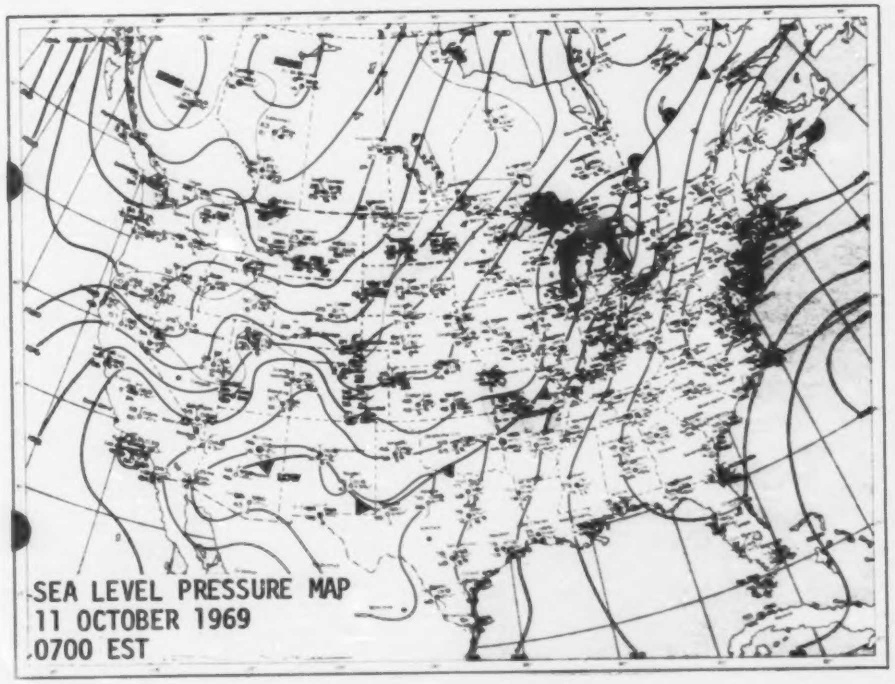
Second cross section flown at 8 km instead of 10 km. Good coverage of GLC by helicopter and bubblers. Afternoon radiosonde not available. Autoanalyzer at airport office measured plume GLC.

Synoptic Situation

Regional - Low over Lake Huron with cold front southwestward through Texas; ridge over Atlantic coastal states. Surface wind light southeasterly. NE-SW 500-mb short waves over eastern U.S. Wind at 500 mb SW 10 mps.

Local - Sunrise clear. Stable with inversions to 850 meters; lapse above to 1070 meters. Plume wind S 6 mps. Noon scattered low and high clouds with haze. Near-neutral to 1077 meters. Plume wind SW 4 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
11 OCTOBER 1969
0700 EST

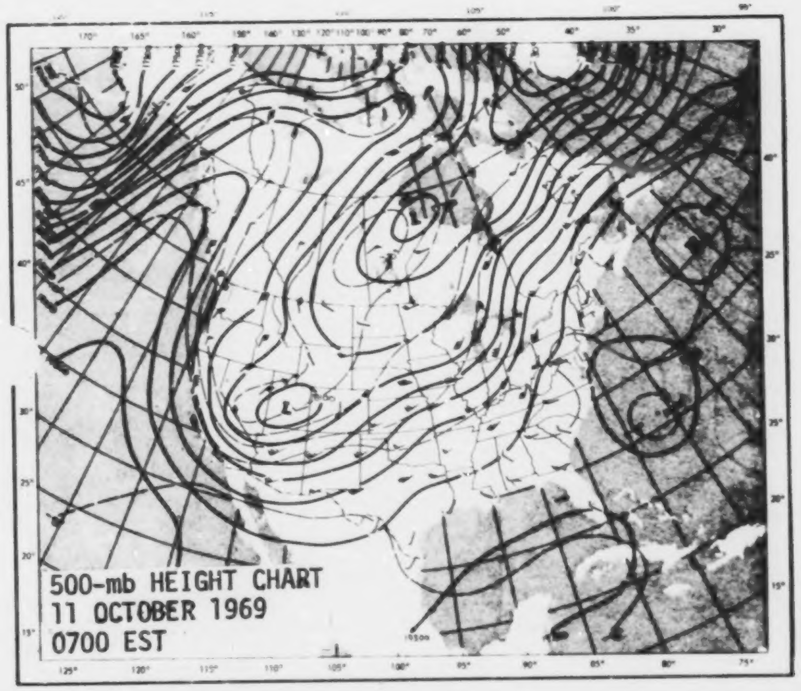

500-mb HEIGHT CHART
11 OCTOBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 13 October 1969 Homer City Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC

Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles

Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

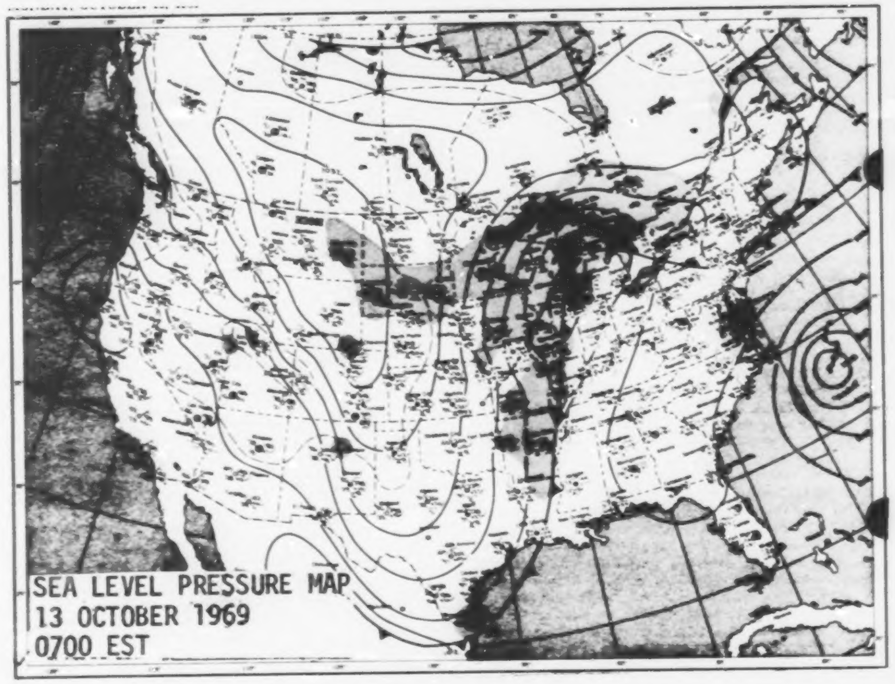
No 16-km cross section attempted to allow more time to measure GLC. Good coverage of GLC by helicopter and bubblers. Autoanalyzer at airport office measured plume GLC.

Synoptic Situation

Regional - Low over Lake Michigan with cold front southward through Louisiana and warm front east through New Jersey. Tropical storm Kara off Carolina coast. Surface wind light and variable. Closed 500-mb low off Carolina coast; high over southern Atlantic states. Wind at 500 mb WSW 12 mps.

Local - Sunrise scattered high clouds with fog and haze. Inversion to 100 meters and 400-518 meters; lapse between and above to 1078 meters. Plume wind S 7 mps. Noon scattered high clouds. Neutral to 1059 meters. Plume wind SSW 6 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
13 OCTOBER 1969
0700 EST

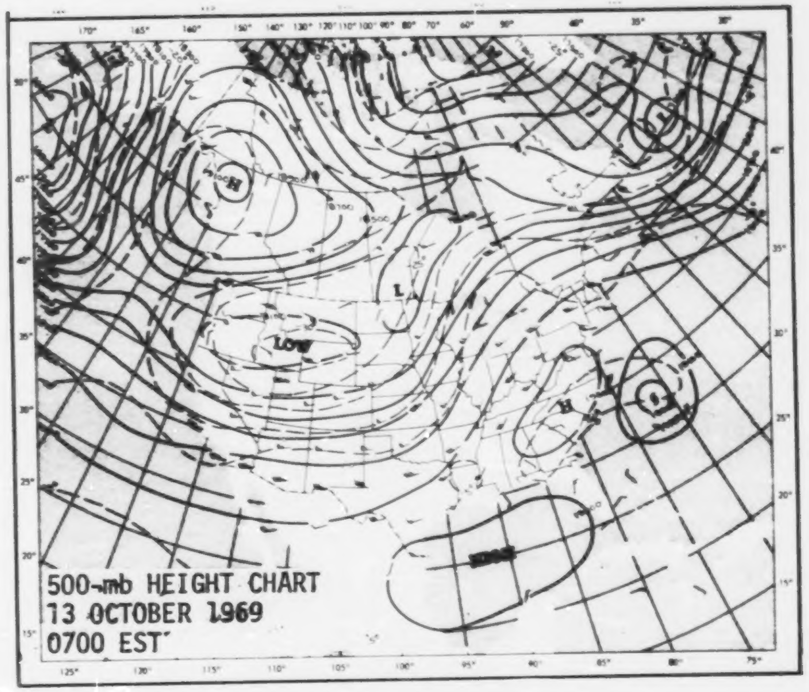

500-mb HEIGHT CHART
13 OCTOBER 1969
0700 EST
LOW
H
L

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 15 October 1969 Homer City Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC

Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles

Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

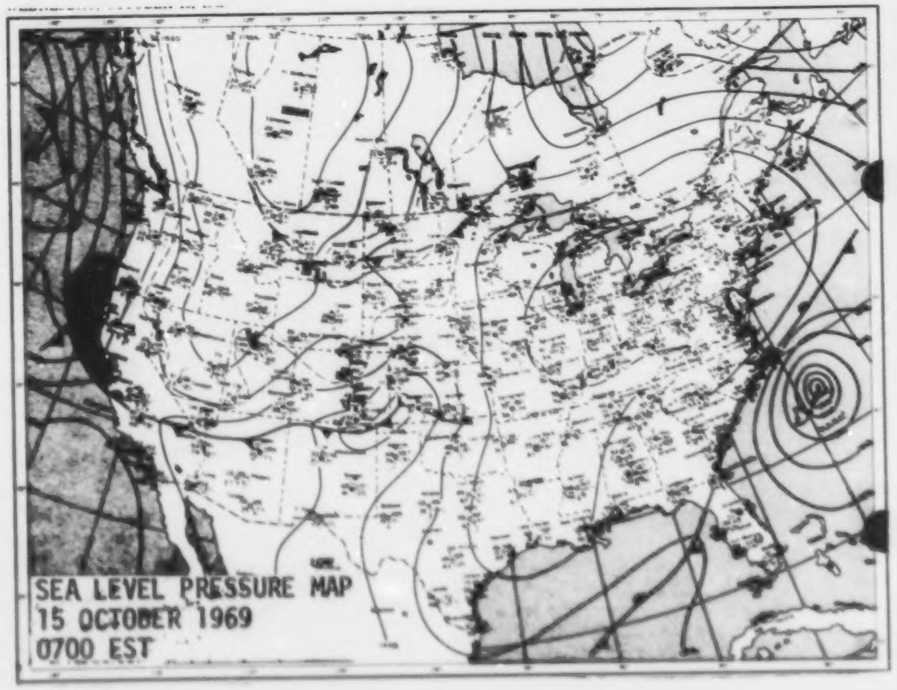
Bottom of 16-km cross section incomplete because of low fuel. Good coverage of GLC by helicopter; partial coverage by bubblers. Bubblers picked up after 2 hours because plume shifted away.

Synoptic Situation

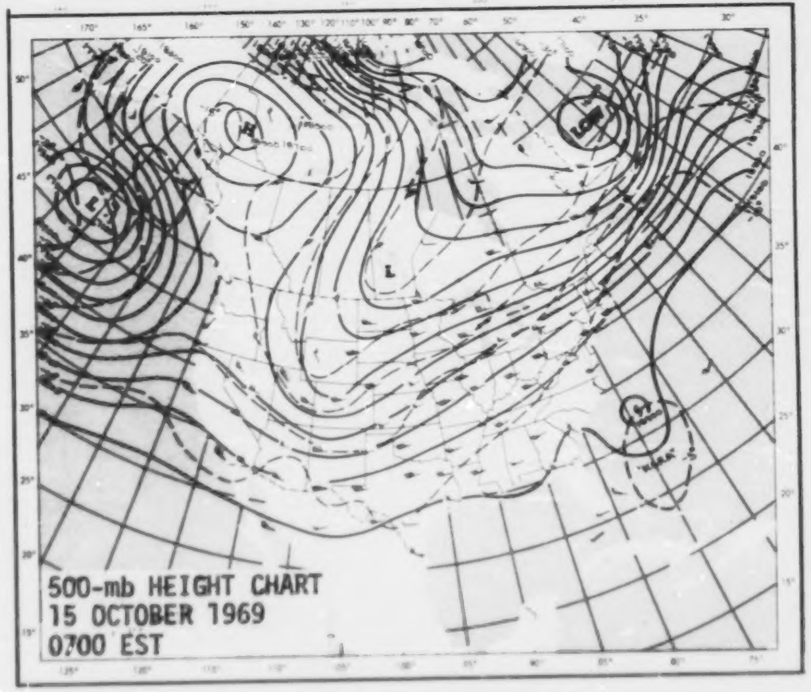
Regional - High over Lake Erie with NE-SW ridge over eastern U.S.; weak front along south Atlantic coast. Hurricane Kara off Carolina coast. Surface wind calm. Closed 500-mb low off Carolina coast; near-zonal flow over eastern U.S. Wind at 500 mb W 20 mps.

Local - Sunrise scattered high clouds with fog. Inversion to 300 meters and 900-1100 meters; lapse between and above to 1225 meters. Plume wind N 3 mps. 1230 PM scattered high clouds. Neutral to 700 meters; stable above to 1100 meters. Plume wind NE 2 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
15 OCTOBER 1969
0700 EST



500-mb HEIGHT CHART
15 OCTOBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 17 October 1969 Homer City Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

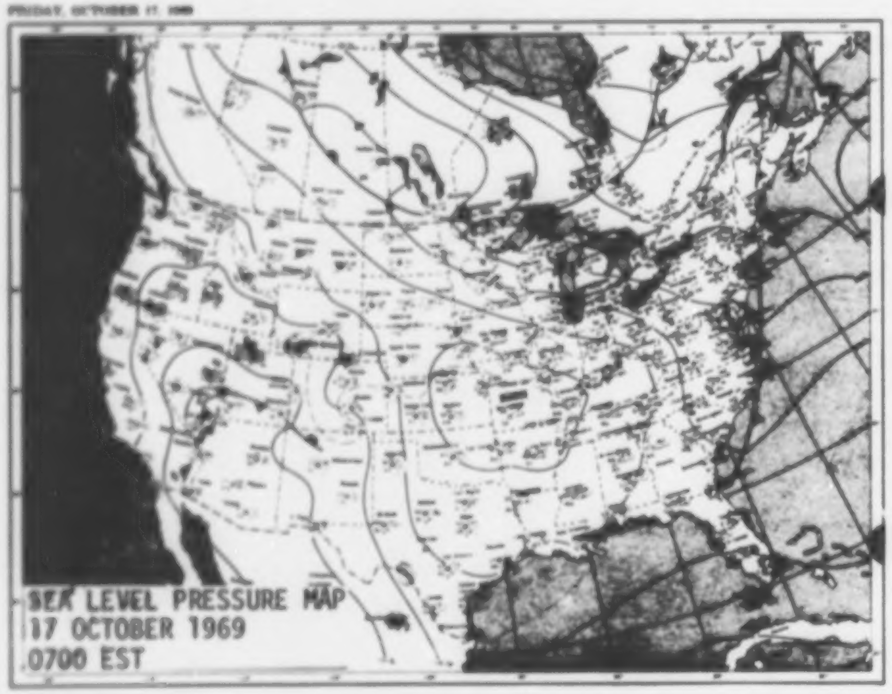
Late start caused by faulty helicopter generator allowed time for only 4- and 10-km cross sections. Top of 10-km cross section not completed because of high wind speeds. Ground-level flights discontinued because of strong low-level turbulence. Bubblers picked up after 2 hours. Plume heading across Chestnut Ridge.

Synoptic Situation

Regional - High over Missouri dominating eastern two-thirds U.S.; frontal trough along Atlantic coast. Surface wind W 5 mps. Closed 500-mb low over Hudson Bay with trough southward to eastern Gulf states. Wind at 500 mb SW 35 mps.

Local - 10 AM broken low clouds. Near-neutral to 960 meters. Plume wind W 11 mps. 1130 AM broken low clouds. Near-neutral to 1090 meters. Plume wind WSW 9 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
17 OCTOBER 1969
0700 EST

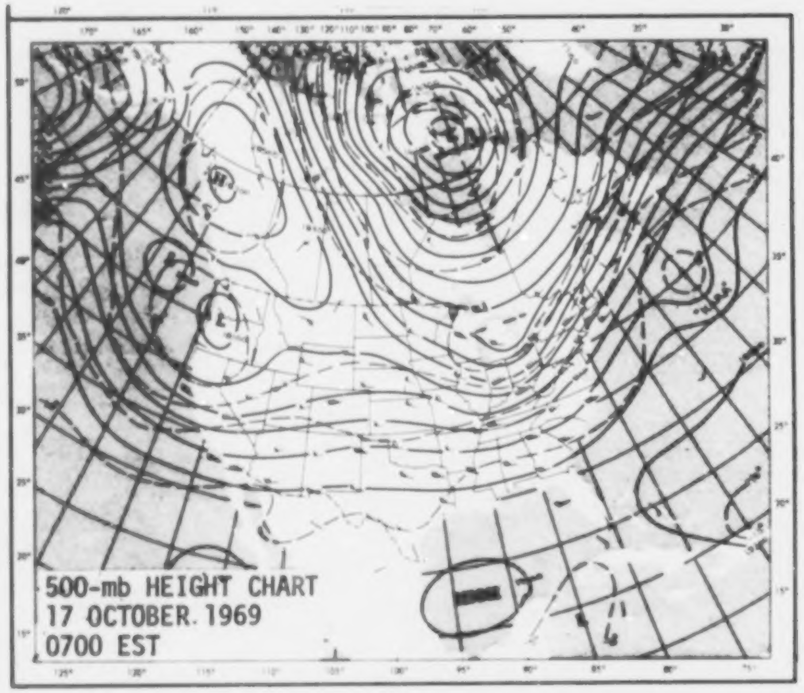

500-mb HEIGHT CHART
17 OCTOBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 18 October 1969 Homer City Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

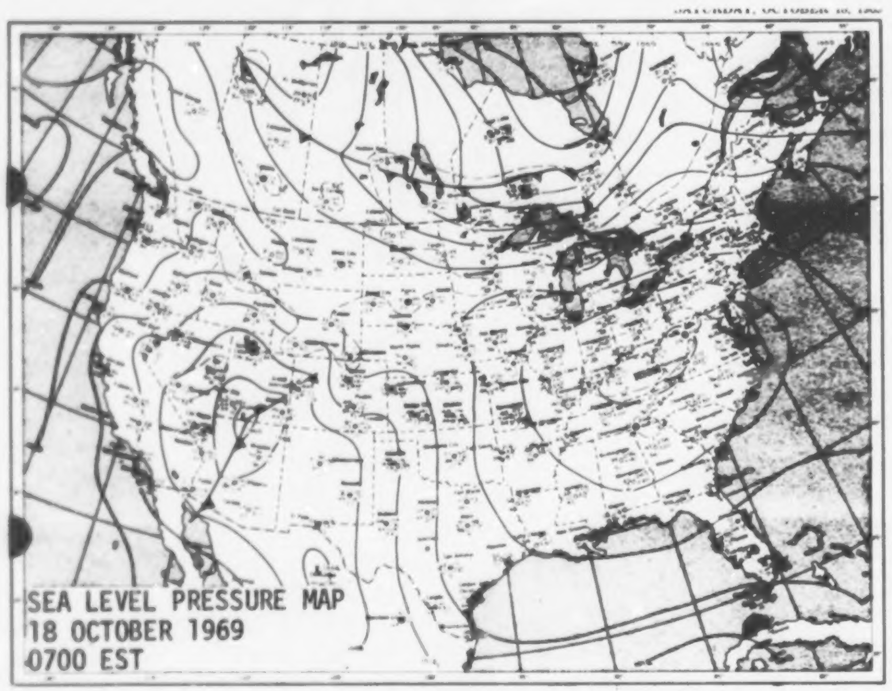
Extremely wide plume. 16-km cross section incomplete because of low fuel. Good coverage of GLC by helicopter and bubblers. Plume heading across Chestnut Ridge.

Synoptic Situation

Regional - High centered over Kentucky and West Virginia dominating eastern half U.S. Surface wind light and variable. Closed 500-mb low over Hudson Bay; zonal flow over eastern U.S. Wind at 500 mb WNW 30 mps.

Local - Sunrise clear with dense haze. Surface inversion to 550 meters; lapse above to 1210 meters. Plume wind WSW 11 mps. Noon clear. Neutral to 1100 meters. Plume wind WSW 8 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
18 OCTOBER 1969
0700 EST

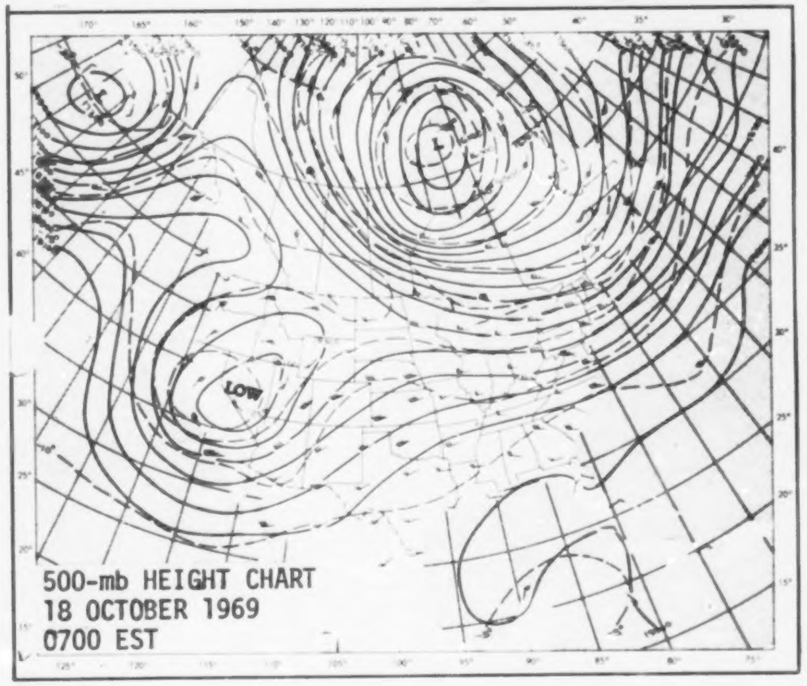

500-mb HEIGHT CHART
18 OCTOBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 20 October 1969 Homer City Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

Battelle Northwest (rain samples collected under Keystone plume)

Commentary

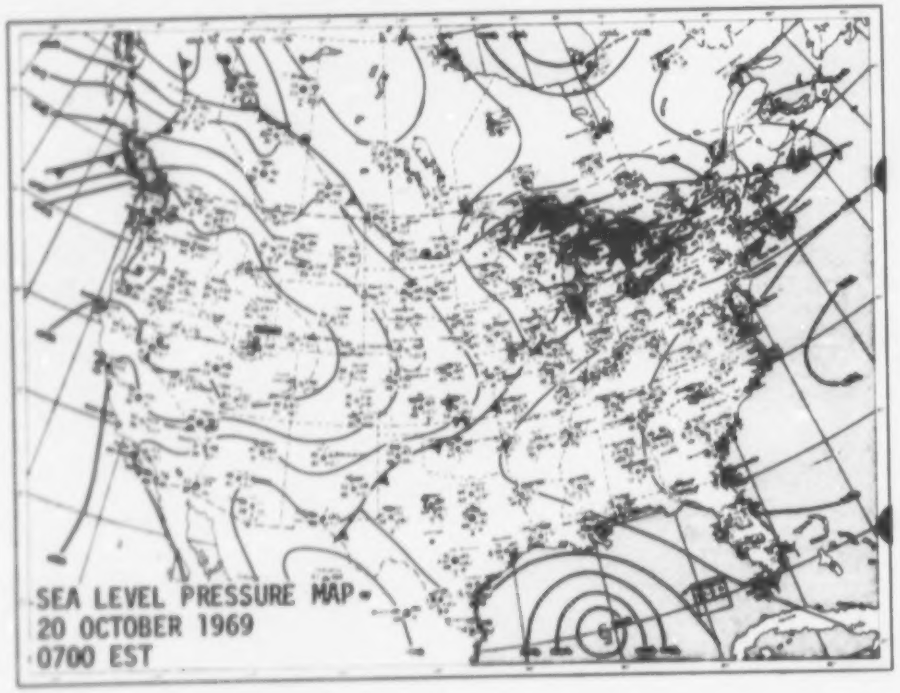
Top of 16-km cross section incomplete because of low clouds. Good coverage of GLC by helicopter and bubblers. Ground-level flights discontinued because of strong low-level turbulence. Plume heading across Chestnut Ridge. No radiosondes available because of receiver malfunction.

Synoptic Situation

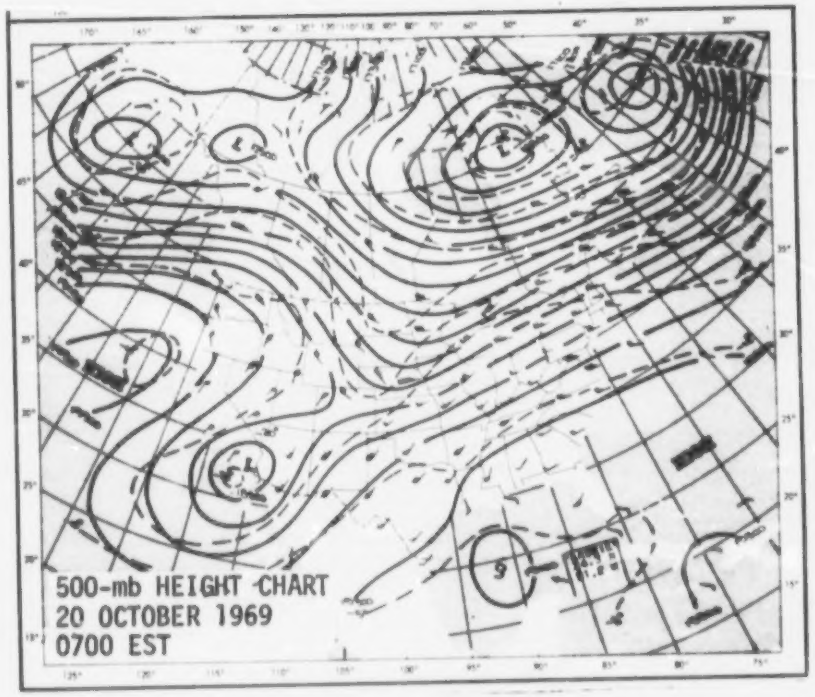
Regional - Low over northern Michigan with cold front southwestward to Texas; E-W ridge from Arkansas through North Carolina. Tropical storm Laurie in central Gulf. Surface wind SW 7 mps. Zonal 500-mb flow over eastern U.S. Wind at 500 mb W 20 mps.

Local - Sunrise clear with haze. Stable with inversions to 650 meters; lapse above to 950 meters. Plume wind SW 13 mps. 1130 AM scattered low clouds with dense haze. Neutral to 720 meters. Plume wind SW 15 mps. 10 PM low overcast with moderate rain showers.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
20 OCTOBER 1969
0700 EST



500-mb HEIGHT CHART
20 OCTOBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 21 October 1969 Homer City Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC

Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles

Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

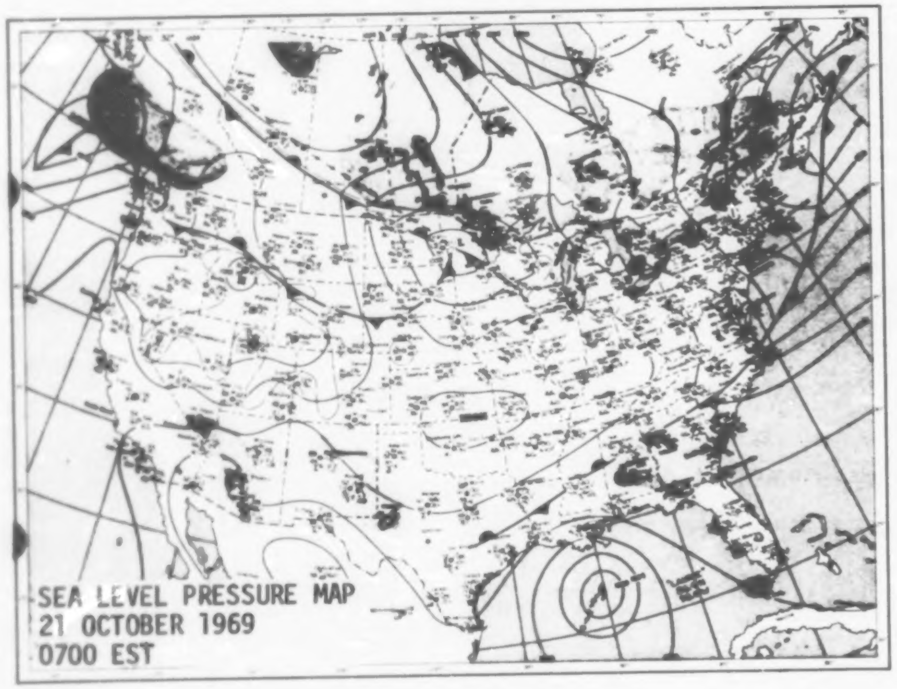
Top of 16-km cross section incomplete because of low clouds. Good coverage of GLC by helicopter and bubblers. Ground-level flights discontinued because of strong low-level turbulence. Plume heading across Chestnut Ridge.

Synoptic Situation

Regional - Low off Nova Scotia with frontal trough southwestward to Texas; high over Great Plains. Hurricane Laurie in central Gulf. Surface wind WSW 10 mps. Long-wave 500-mb trough over northeastern U.S. Wind at 500 mb WNW 30 mps.

Local - Sunrise scattered high clouds with haze. Surface inversion to 50 meters; lapse above to 1070 meters. Plume wind W 10 mps. 1230 PM broken low clouds with haze. Neutral to 1085 meters. Plume wind W 14 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
21 OCTOBER 1969
0700 EST

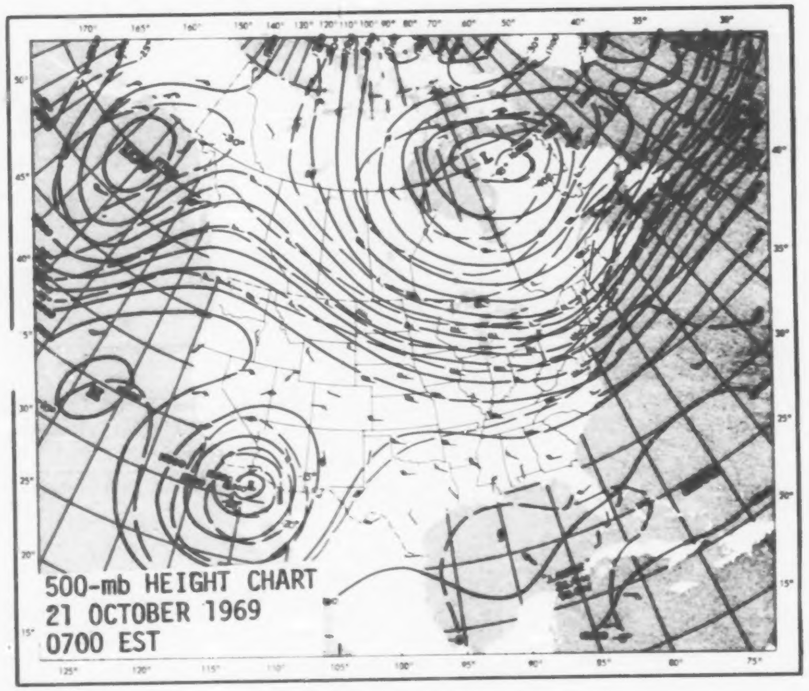

500-mb HEIGHT CHART
21 OCTOBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 23 October 1969 Homer City Plume Unit No. 1

SO_2 Measurements

On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profile
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

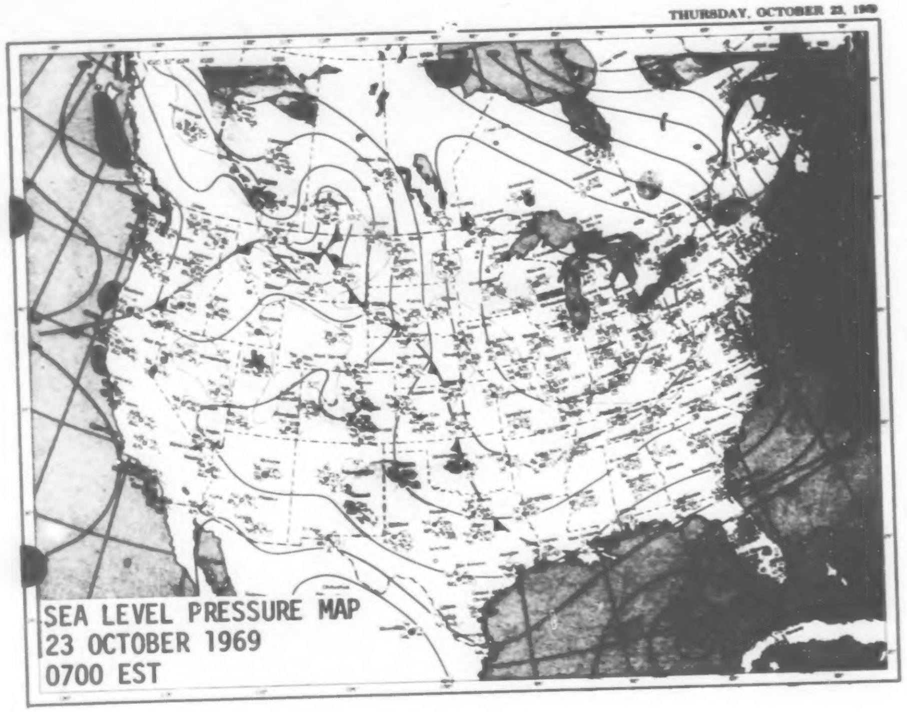
Flights terminated after temperature profile because lack of helicopter heater caused icing inside bubbler. Bubblers were not set out. No afternoon radiosonde released.

Synoptic Situation

Regional - High centered over Wisconsin dominating eastern half U.S. Tropical storm Laurie in Gulf. Surface wind light northwesterly. 500-mb low over Quebec with long-wave trough along Atlantic coast. Wind at 500 mb NW 40 mps.

Local - Sunrise broken middle clouds. Stable to 350 meters; lapse above to 1074 meters. Plume wind NW 8 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


THURSDAY, OCTOBER 23, 1969
SEA LEVEL PRESSURE MAP
23 OCTOBER 1969
0700 EST

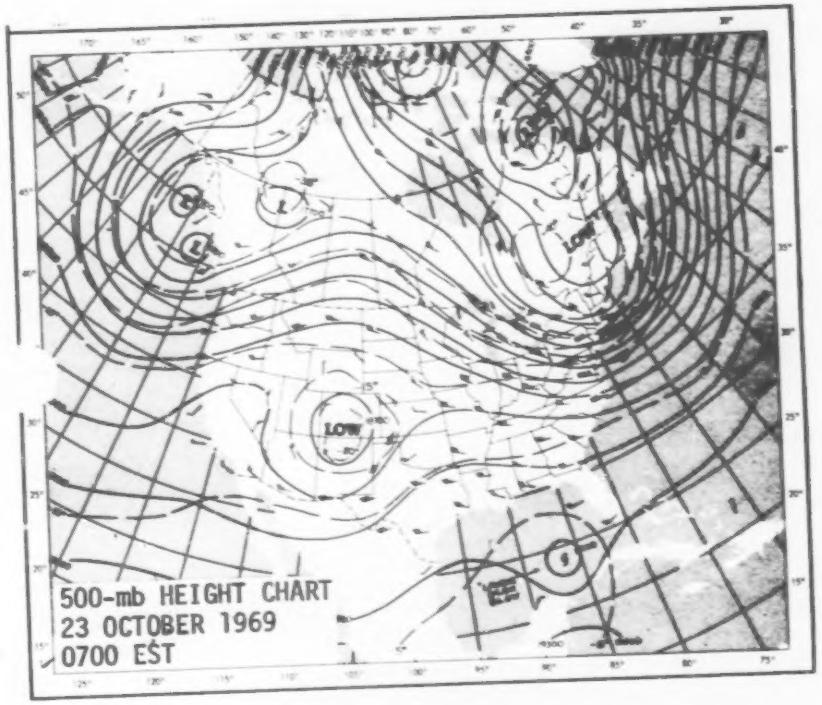

LOW
LOW
500-mb HEIGHT CHART
23 OCTOBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 24 October 1969 Homer City Plume Unit No. 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

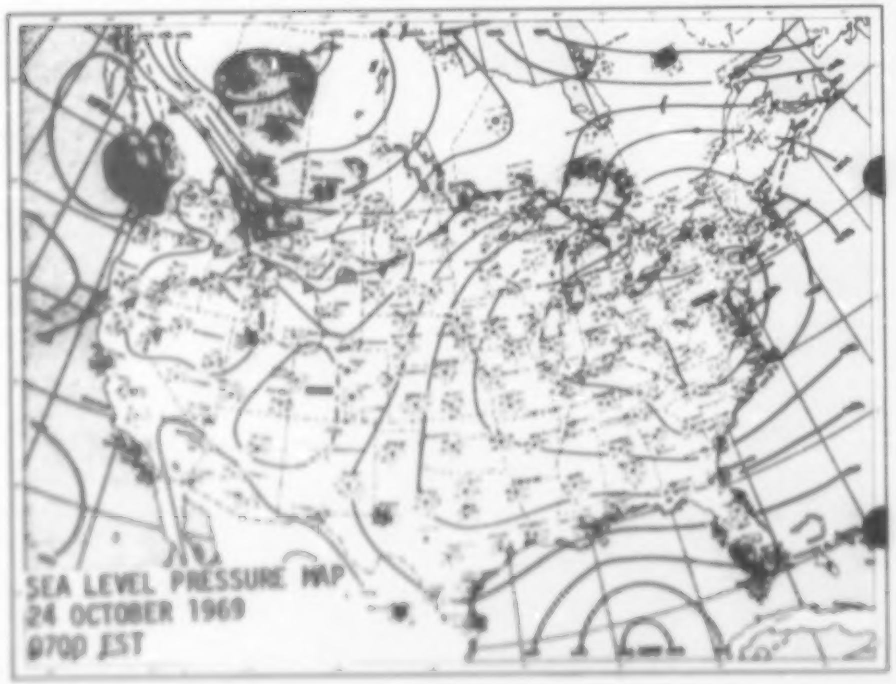
Plume cross sections reflect shifting wind direction. Good coverage of GLC by helicopter. Bubblers were not set out because of rapidly shifting plume. Autoanalyzer at airport office measured plume GLC.

Synoptic Situation

Regional - High centered over Maryland dominating eastern half U.S.; warm front through western Great Lakes. Surface wind near calm. Long-wave 500-mb trough off New England coast; weak gradient over southeast U.S. Wind at 500 mb NW 20 mps.

Local - Sunrise clear. Stable with inversions to 1090 meters. Plume wind SE 5 mps. Noon clear. Neutral to 650 meters; stable above with inversions to 1100 meters. Plume wind S 2 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
24 OCTOBER 1969
0700 EST

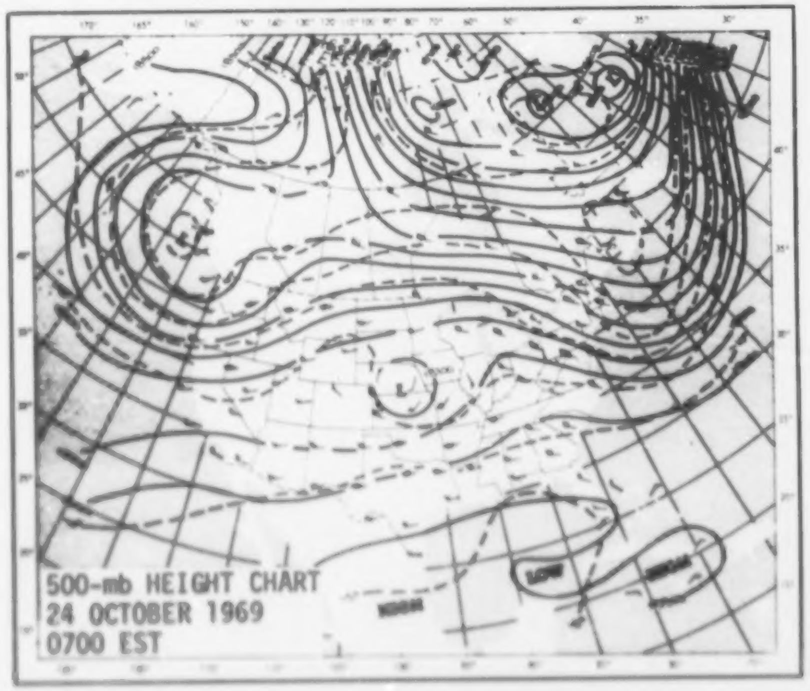

500-mb HEIGHT CHART
24 OCTOBER 1969
0700 EST
LOW

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 28 October 1969 Keystone Plume Unit No. 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

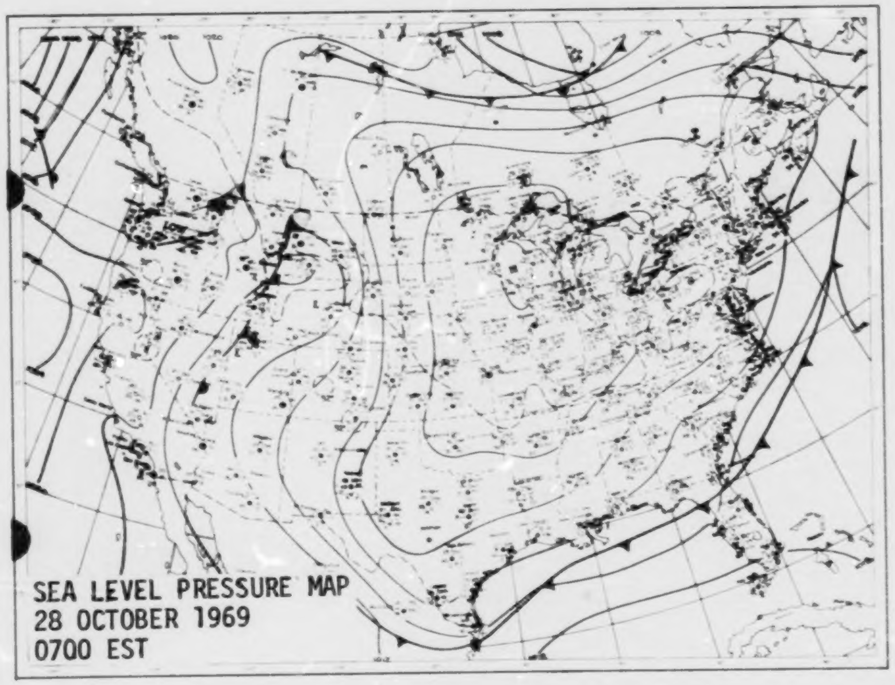
Good coverage of GLC by helicopter and bubblers. Afternoon radiosonde not available because of receiver interference.

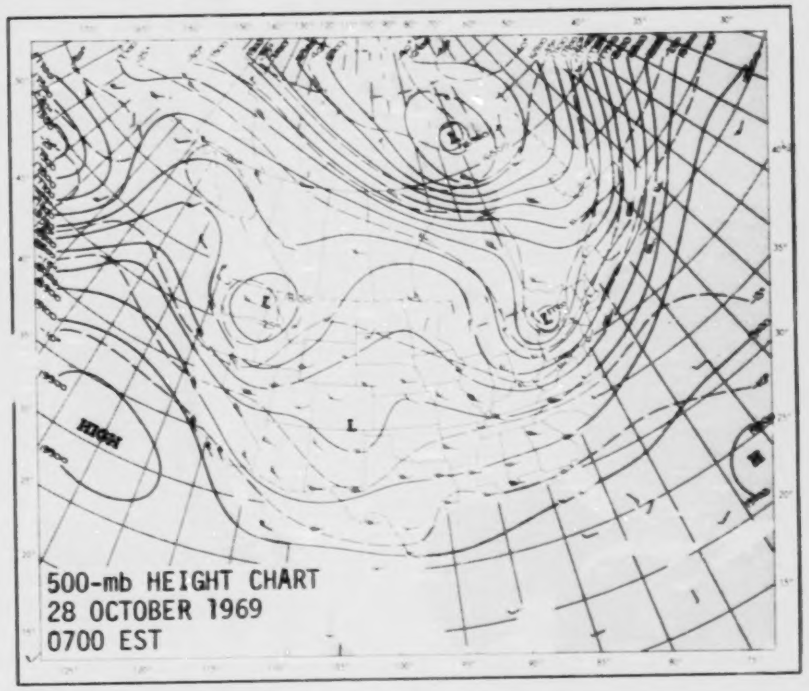
Synoptic Situation

Regional - High centered over Wisconsin dominating eastern half U.S. Surface wind light and variable. Closed 500-mb low over Lake Ontario with shallow trough southwestward; zonal flow over southeast U.S. Wind at 500 mb W 25 mps.

Local - Sunrise broken low clouds with fog and haze. Stable with inversions to 450 meters; lapse above to 1050 meters. Plume wind W 6 mps. Noon scattered low clouds. Near-neutral to 1100 meters. Plume wind NNW 5 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
28 OCTOBER 1969
0700 EST



500-mb HEIGHT CHART
28 OCTOBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 29 October 1969 Keystone Plume Unit No. 2

SO2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC

Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles

Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

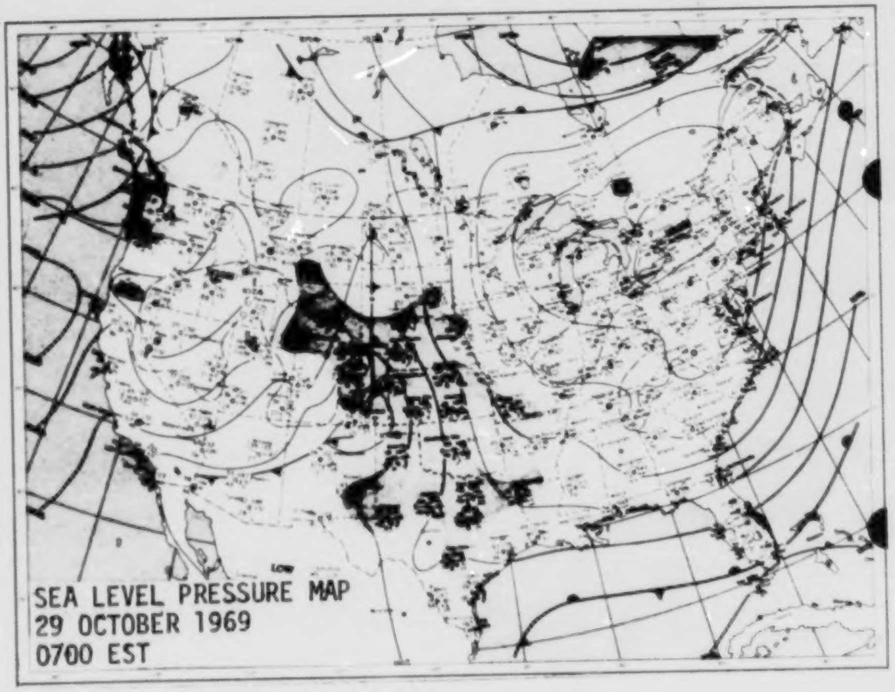
No 16-km cross section attempted to allow more time to measure GLC. Good coverage of GLC by helicopter and bubblers.

Synoptic Situation

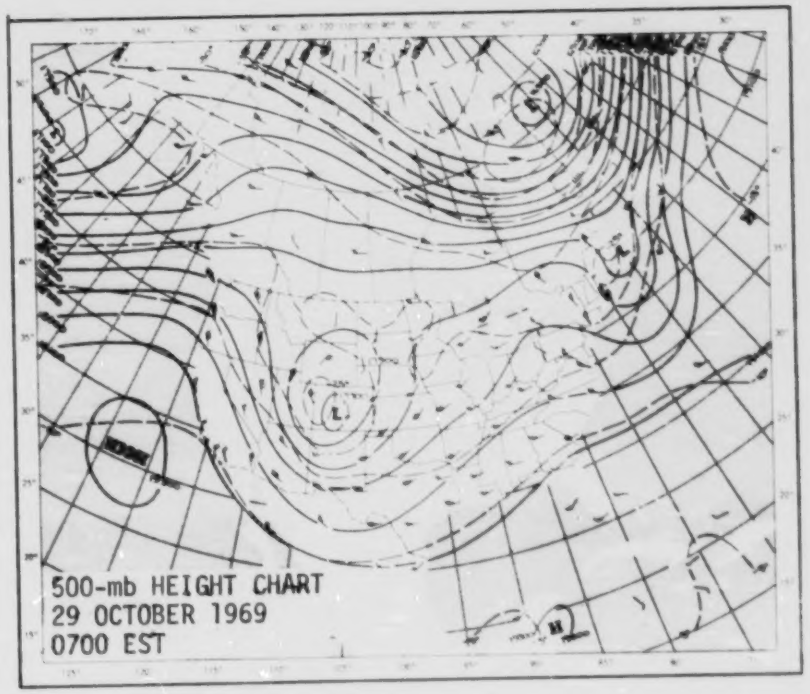
Regional - High centered over Lake Ontario dominating eastern half U.S. Surface wind light and variable. 500-mb low over Nova Scotia with trough southward; ridge from western Pennsylvania to Quebec. Wind at 500 mb NW 5 mps.

Local - Sunrise scattered high clouds. Stable with inversions to 1150 meters. Plume wind E 8 mps. 1230 PM broken high clouds. Neutral to 800 meters; stable above to 1100 meters. Plume wind NE 2 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
29 OCTOBER 1969
0700 EST



500-mb HEIGHT CHART
29 OCTOBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 30 October 1969 Keystone Plume Unit No. 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

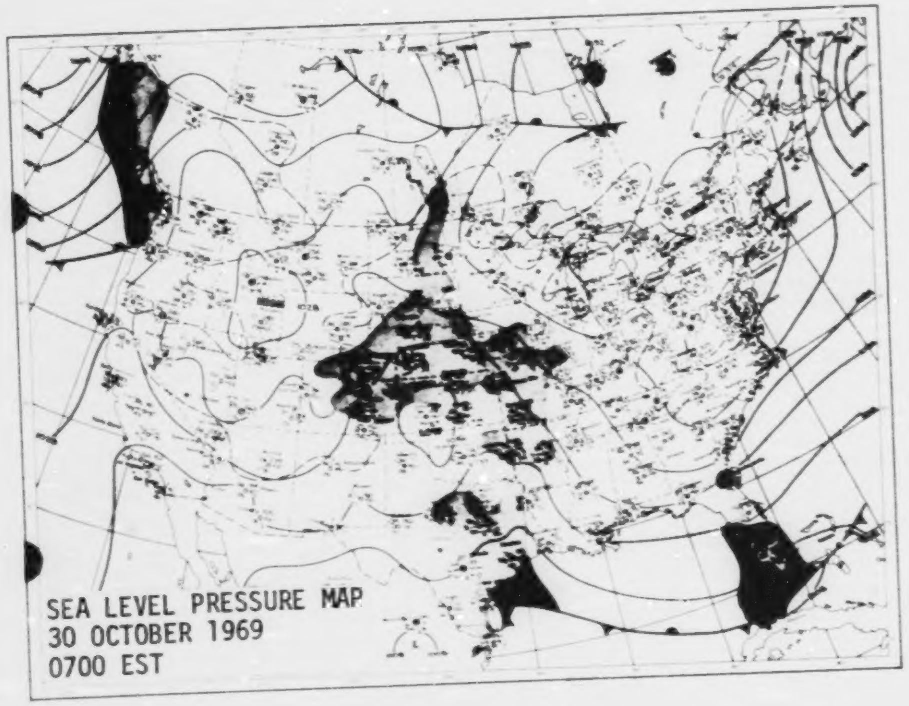
Plant shutdown caused termination of flights after 4- and 10-km cross sections. Bubblers were not set out and afternoon radiosonde not released.

Synoptic Situation

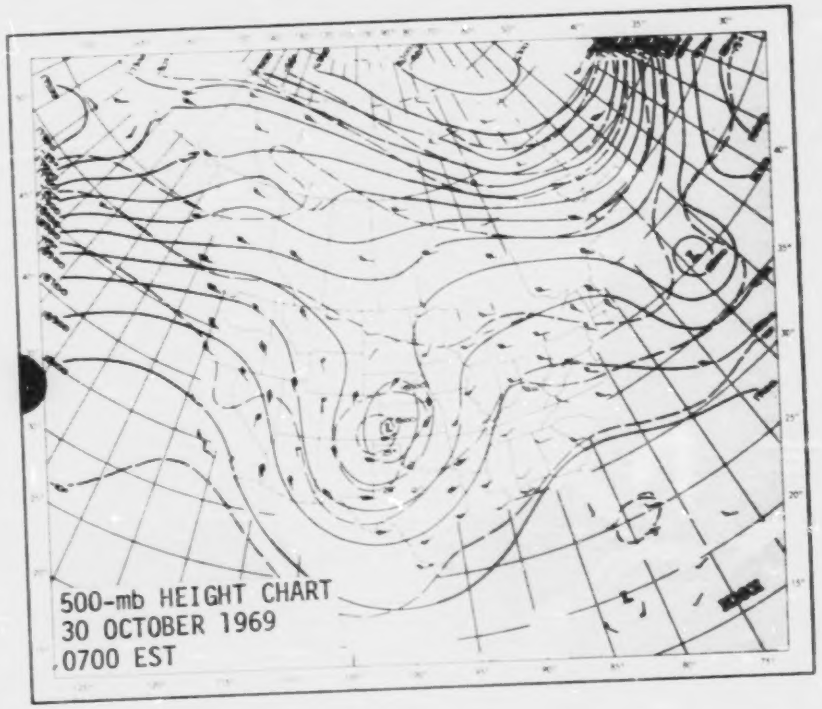
Regional - High centered over eastern Ontario dominating eastern half U.S.; ridge southward to Gulf coast. Surface wind light and variable. Closed 500-mb low over western Kansas with weak gradient over eastern U.S. Wind at 500 mb WNW 12 mps.

Local - Sunrise clear. Stable with inversions to 900 meters; lapse above to 1083 meters. Plume wind ESE 7 mps. 09 AM clear. Stable with inversions to 1000 meters. Plume wind ESE 6 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
30 OCTOBER 1969
0700 EST



500-mb HEIGHT CHART
30 OCTOBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 31 October 1969 Keystone Plume Unit No. 2

SO2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

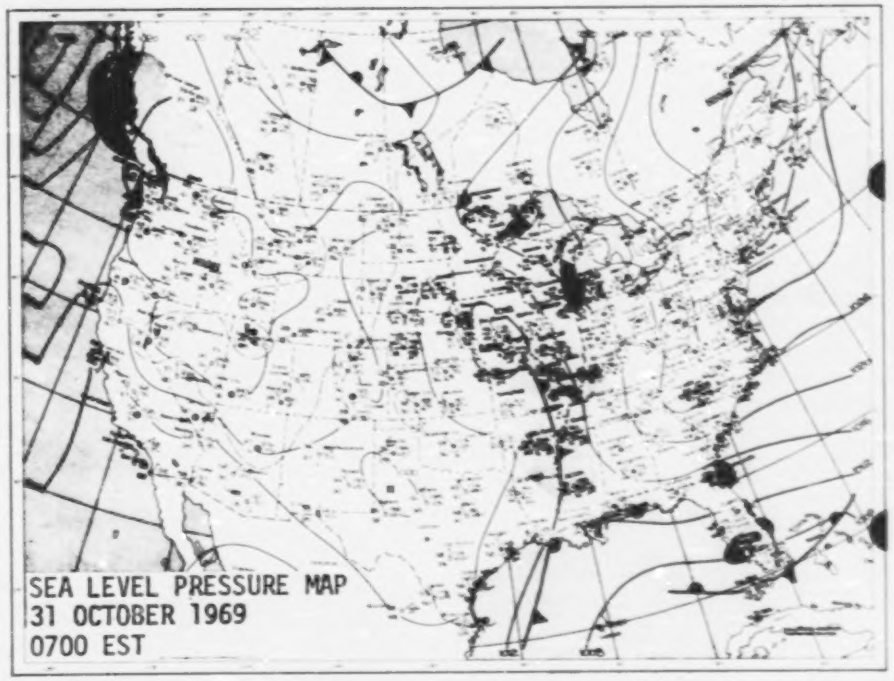
No 16-km cross section attempted to allow more time to measure GLC. 10-km cross section reflects shifting wind direction. Good coverage of GLC by helicopter and bubblers.

Synoptic Situation

Regional - Low over Missouri-Iowa border with cold front through Louisiana; ridge from Maine to Alabama. Surface wind light easterly. Closed 500-mb low over Nebraska and Kansas; ridge from Virginia to central Quebec. Wind at 500 mb SW 10 mps.

Local - Sunrise clear. Stable with inversions to 700 meters; lapse above to 1085 meters. Plume wind SE 8 mps. 11 AM scattered high clouds. Stable with inversions 500-900 meters; neutral below and lapse above to 1115 meters. Plume wind SE 4 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
31 OCTOBER 1969
0700 EST

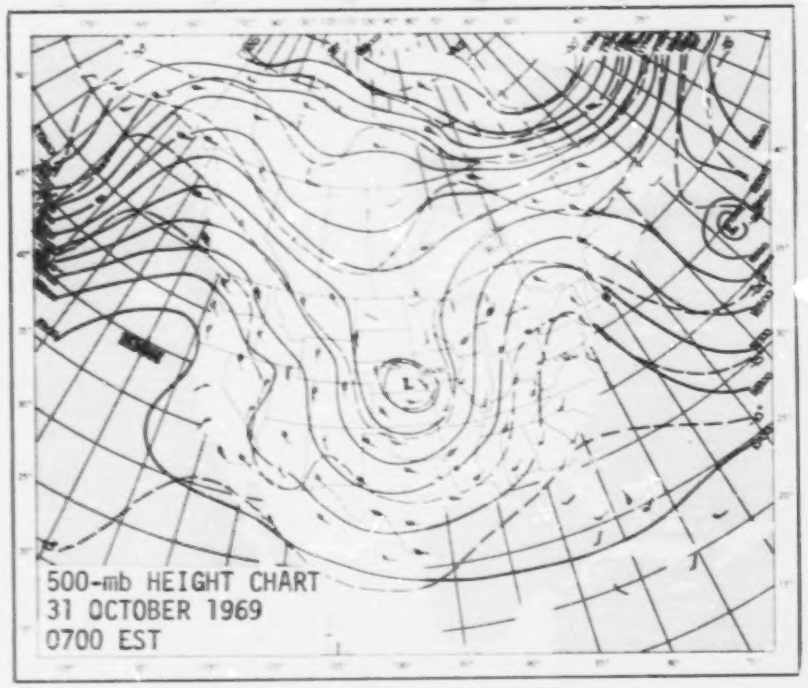

500-mb HEIGHT CHART
31 OCTOBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 1 November 1969 Keystone Plume Unit No. 2

SO2 Measurements

Plume Cross Sections
Helicopter Peak GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles
Pilot Balloon
Airport Surface Data

Other Participants

Battelle Northwest (rain samples collected under Keystone plume)

Commentary

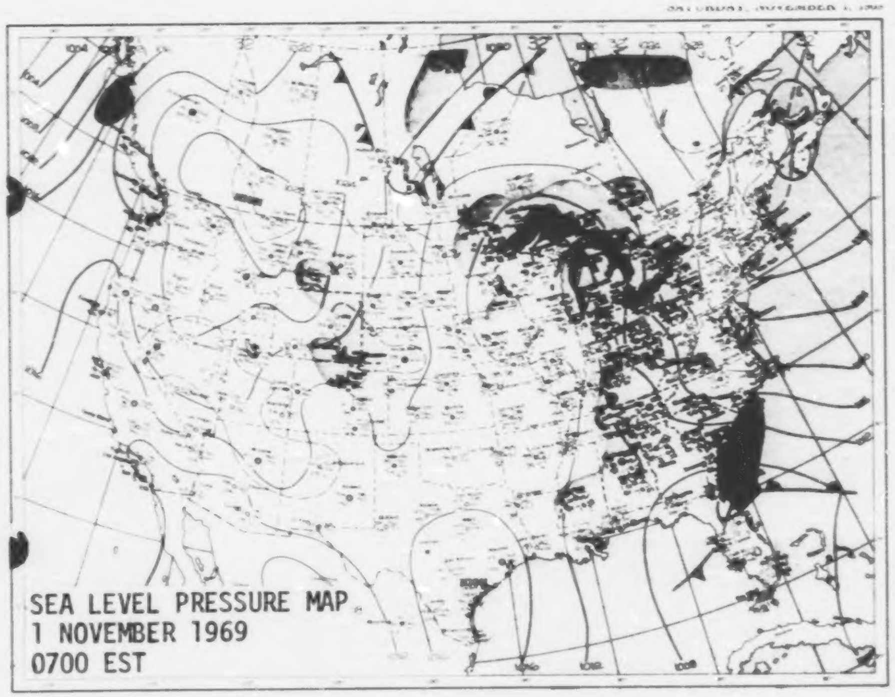
Top of 10-km cross section incomplete because of low clouds. 4- and 10-km cross sections flown during light rain. Ground-level flights discontinued because of weather. Bubblers were not set out and afternoon radiosonde not released. Low-altitude termination of temperature profiles caused by low clouds.

Synoptic Situation

Regional - Low over northern Wisconsin with front southward to Alabama. High over New Brunswick and Nova Scotia with ridge southwestward to Georgia. Surface wind ESE 5 mps. Closed 500-mb low over Wisconsin; high off central Atlantic coast. Wind at 500 mb SW 15 mps.

Local - Sunrise low overcast with light rain. Stable to 350 meters; lapse above to 800 meters. Plume wind SSE 8 mps. 09 AM low overcast with light rain. Lapse to 650 meters. Plume wind SSE 8 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
1 NOVEMBER 1969
0700 EST

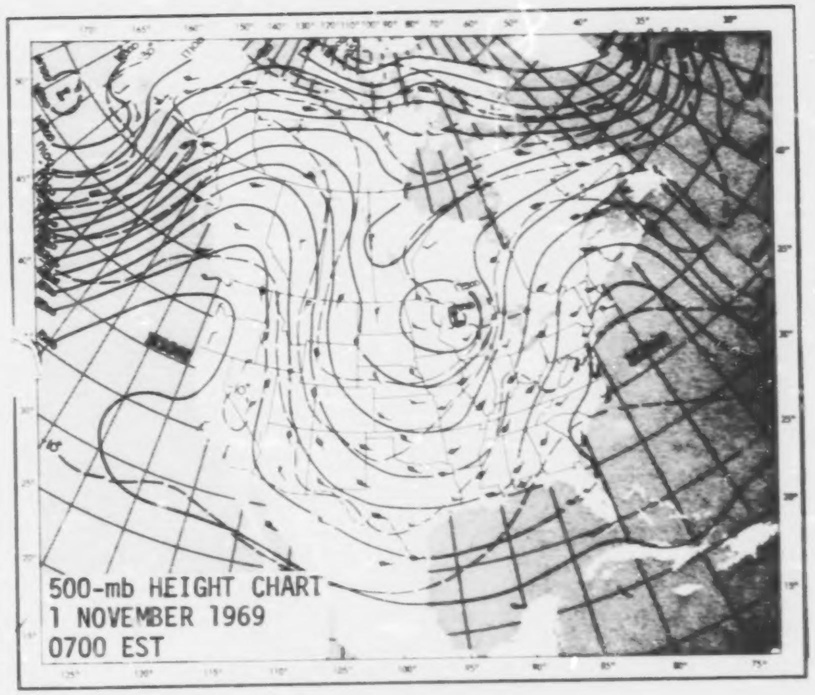

500-mb HEIGHT CHART
1 NOVEMBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 2 November 1969 Keystone Plume Unit No. 2

SO_2 Measurements

On-Stream Autoanalyzer GLC

Meteorological Measurements

Airport Surface Data

Other Participants

Battelle Northwest (rain samples collected under Keystone plume)

Commentary

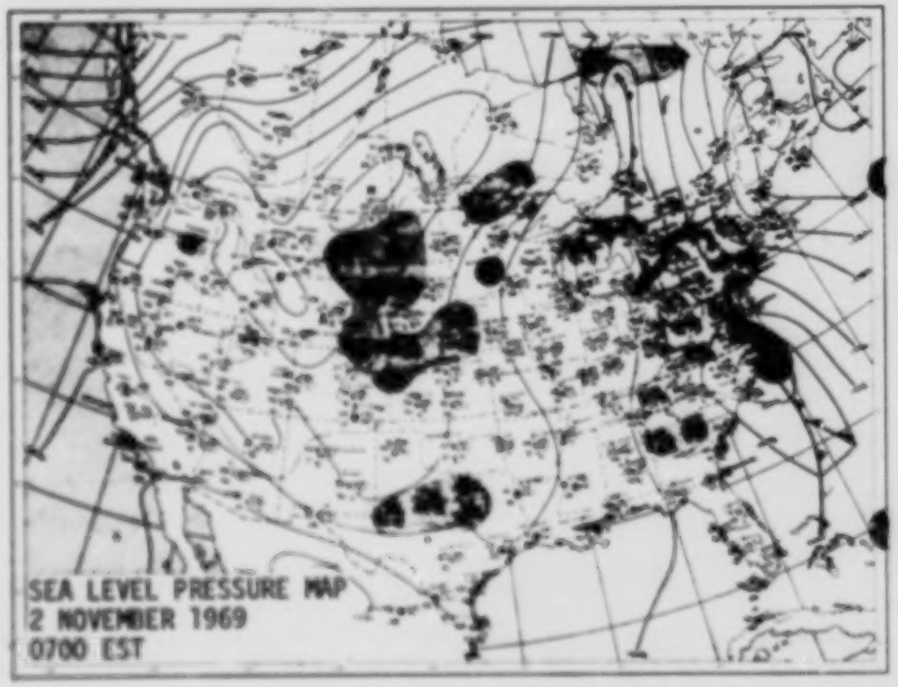
Helicopter flights prevented by low ceiling. Bubblers were not set out and no radiosondes or pilot balloons released.

Synoptic Situation

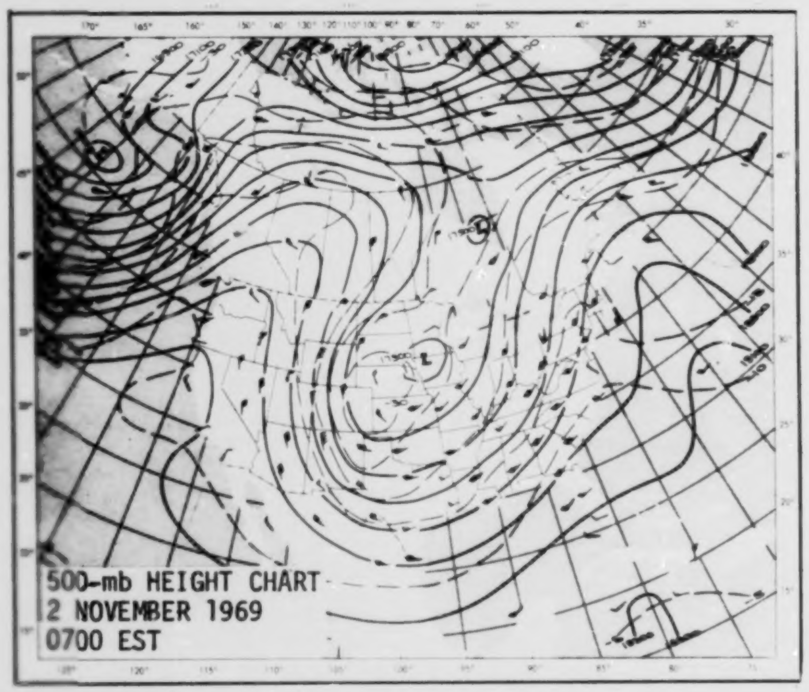
Regional - N-S front from low east of James Bay to West Virginia. Low off Hatteras with front southward; weak ridge from Nova Scotia to western Pennsylvania. Surface wind SE 5 mps. Eastern U.S. under leading edge of 500-mb long-wave trough. Wind at 500 mb SW 20 mps.

Local - Sunrise low overcast with moderate rain showers. Noon low overcast with very light rain showers. No temperature profiles or plume winds available; airport surface data listed in Table 2.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
2 NOVEMBER 1969
0700 EST



500-mb HEIGHT CHART
2 NOVEMBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

October 1969 Series 6 November 1969 Homer City Plume Unit No. 1

SO$_2$ Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-Stream Autoanalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

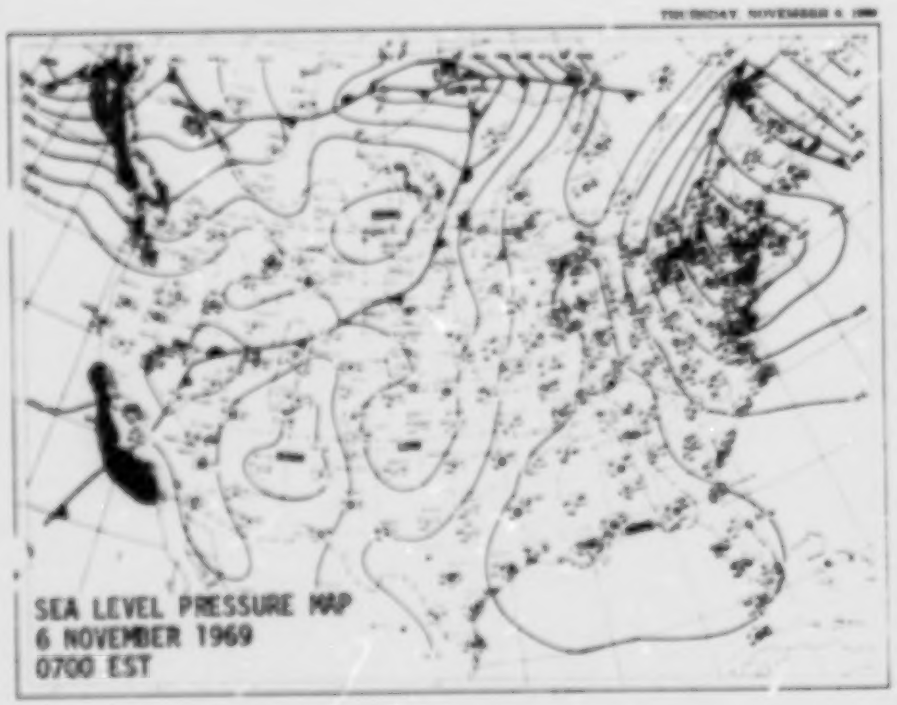
Tops of 4- and 10-km cross sections incomplete because of low clouds; no 16-km cross section attempted. Good coverage of GLC by helicopter. Sparse coverage by bubblers caused by wind shift. Low-altitude termination of first two temperature profiles and most pilot balloon runs caused by low clouds. Plume heading across Chestnut Ridge.

Synoptic Situation

Regional - Low over southern New York with front northward; ridge from Lake Michigan to Gulf coast. Surface wind NW 7 mps. Deep 500-mb low over southern Vermont; ridge over Mississippi Valley. Wind at 500 mb N 25 mps.

Local - Sunrise low overcast. Near-neutral to 650 meters. Plume wind WNW 10 mps. Noon low overcast. Neutral to 1080 meters. Plume wind NW 9 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
6 NOVEMBER 1969
0700 EST

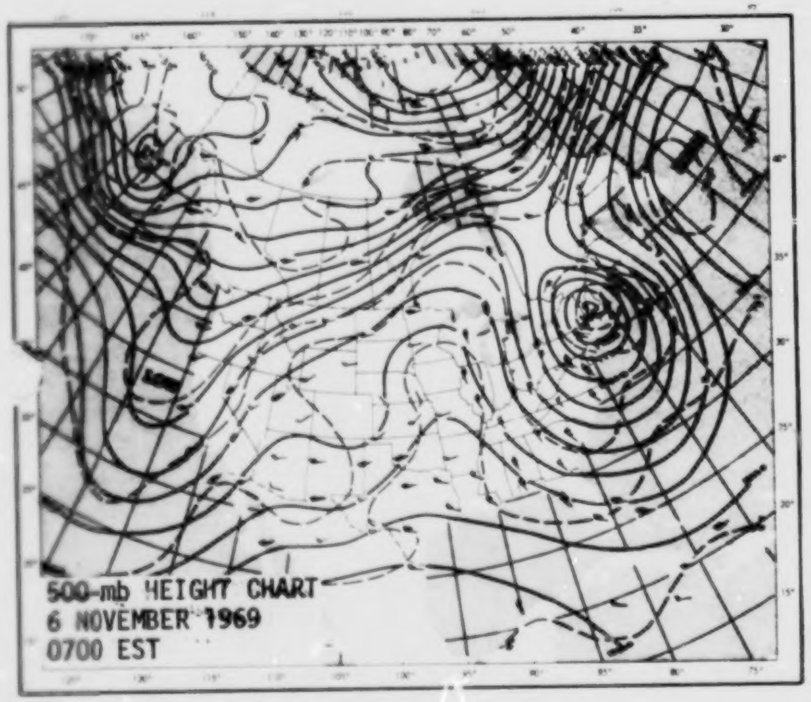

500-mb HEIGHT CHART
6 NOVEMBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

Keystone Cooling Tower Study 28 November 1969 Keystone Plume Units No. 1 and 2

SO_2 Measurements

On-Stream Autoanalyzer GLC

Meteorological Measurements

Airport Surface Data

Other Participants

Illinois Institute of Technology Research Institute (helicopter measurements of cooling tower plumes)

Commentary

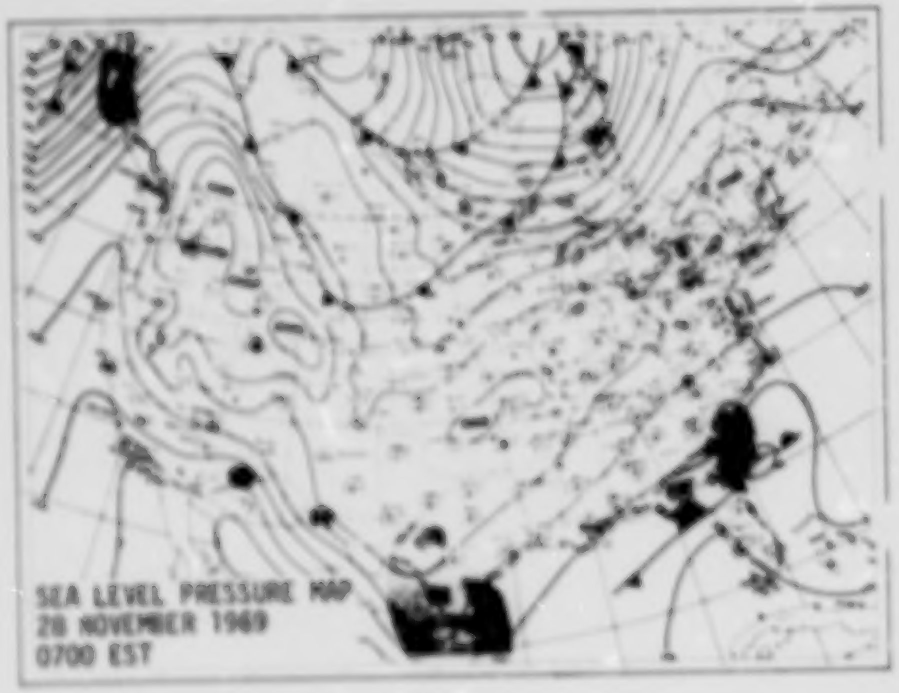
LAPPES series not in progress. No upper air wind or temperature measurements obtained by NAPCA personnel.

Synoptic Situation

Regional - NE-SW ridge dominating northeastern U.S. with high centers over New England and Oklahoma. Surface wind light northerly. NE-SW 500-mb trough over eastern U.S. Wind at 500 mb N 10 mps.

Local - Sunrise broken low clouds. Noon broken low clouds. No helicopter temperature profiles or plume winds available; airport surface data listed in Table 2.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
28 NOVEMBER 1969
0700 EST

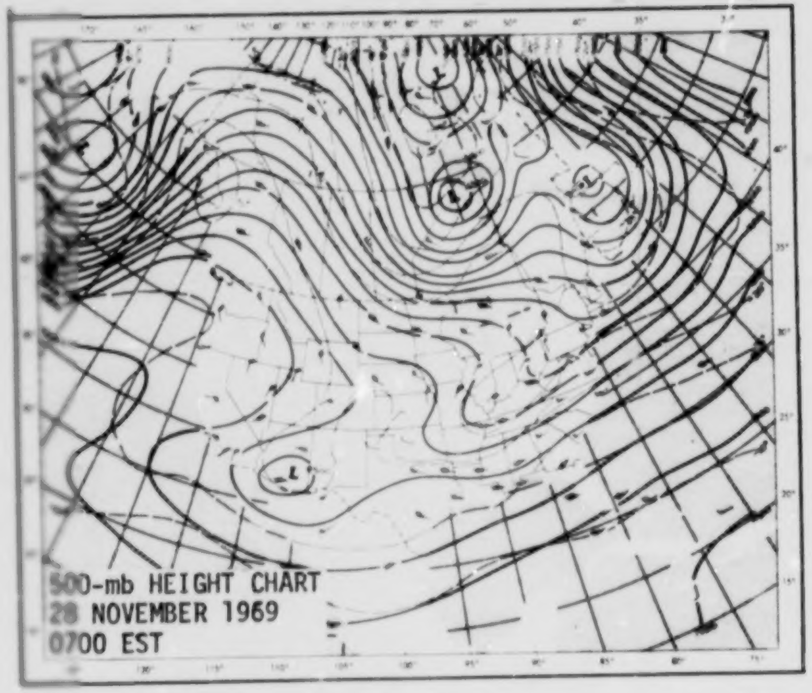

500-mb HEIGHT CHART
28 NOVEMBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

Keystone Cooling Tower Study 30 November 1969 Keystone Plume Units No. 1 and 2

SO_2 Measurements

On-Stream Autoanalyzer GLC

Meteorological Measurements

Airport Surface Data

Other Participants

Illinois Institute of Technology Research Institute (helicopter measurements of cooling tower plumes)

Commentary

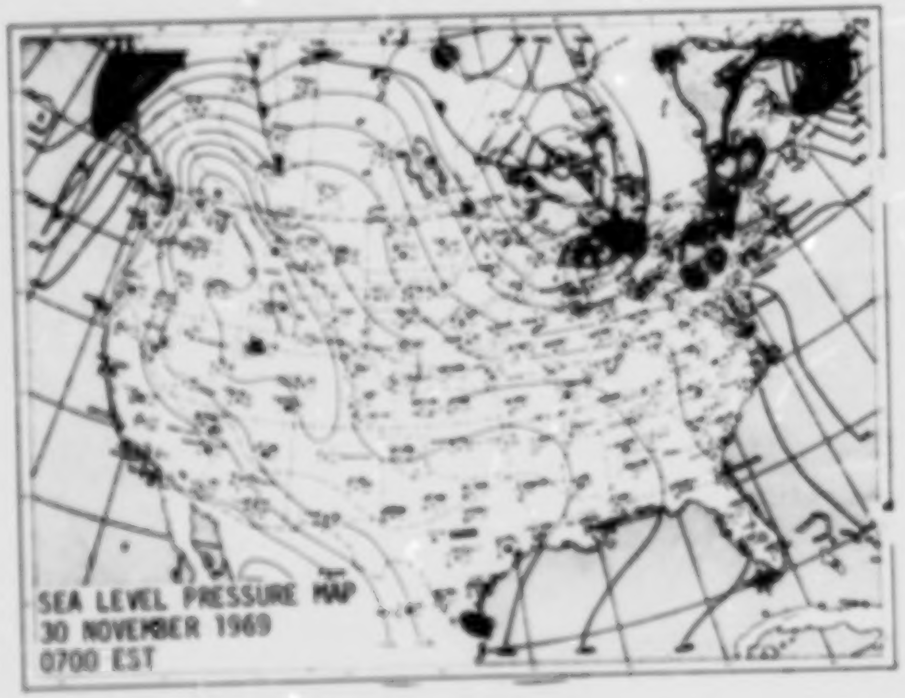
LAPPES series not in progress. No upper air wind or temperature measurements obtained by NAPCA personnel.

Synoptic Situation

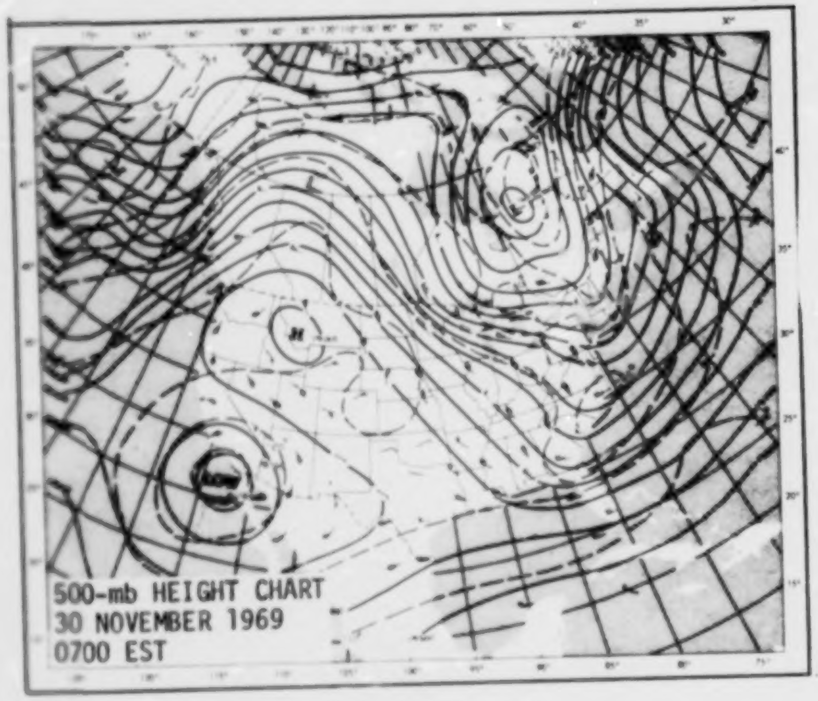
Regional - Low over central Ontario with warm front to Lake Huron; high over Texas with associated ridge over eastern U.S. Surface wind W 7 mps. Closed 500-mb low east of James Bay with trough along Atlantic coast. Wind at 500 mb NW 20 mps.

Local - Noon broken low clouds. No helicopter temperature profiles or plume winds available; airport surface data listed in Table 2.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
30 NOVEMBER 1969
0700 EST



500-mb HEIGHT CHART
30 NOVEMBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

Keystone Cooling Tower Study 2 December 1969 Keystone Plume Units No. 1 and 2

SO$_2$ Measurements

On-Stream Autoanalyzer GLC

Meteorological Measurements

Airport Surface Data

Other Participants

Illinois Institute of Technology Research Institute (helicopter measurements of cooling tower plumes)

Commentary

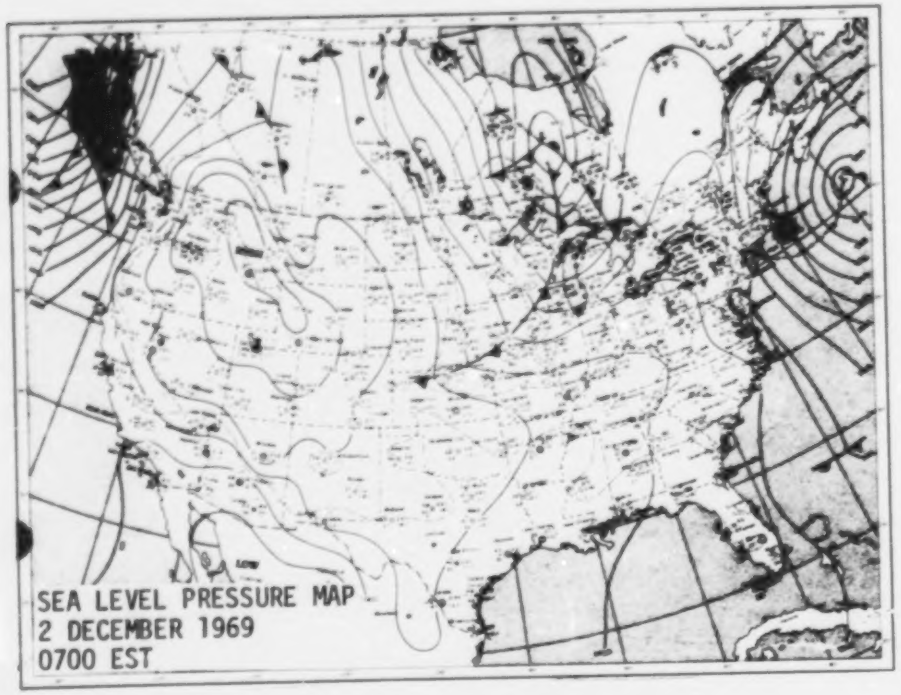
LAPPES series not in progress. No upper air wind or temperature measurements obtained by NAPCA personnel.

Synoptic Situation

Regional - Frontal trough from low in central Ontario to northern Kansas; NE-SW ridge over eastern U.S. Surface wind light and variable. Closed 500-mb low off New England coast; short ridge over Great Lakes. Wind at 500 mb NNW 35 mps.

Local - Sunrise clear. Noon clear. No helicopter temperature profiles or plume winds available; airport surface data listed in Table 2.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
2 DECEMBER 1969
0700 EST

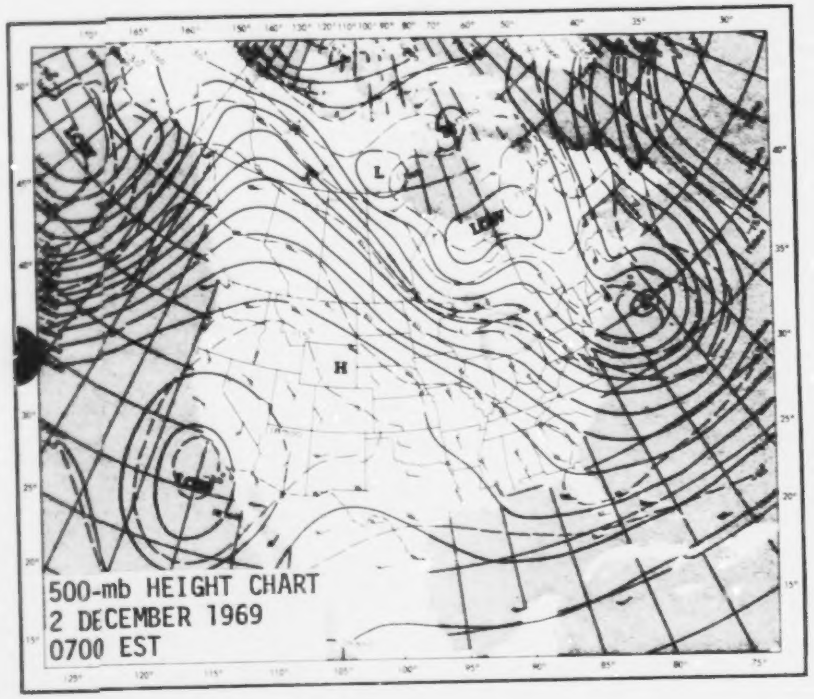

500-mb HEIGHT CHART
2 DECEMBER 1969
0700 EST

Table 1. (continued) DAILY EXPERIMENT SUMMARY

Keystone Cooling Tower Study 5 December 1969 Keystone Plume Unit No. 2

SO_2 Measurements

On-Stream Autoanalyzer GLC

Meteorological Measurements

Airport Surface Data

Other Participants

Illinois Institute of Technology Research Institute (helicopter measurements of cooling tower plumes)

Commentary

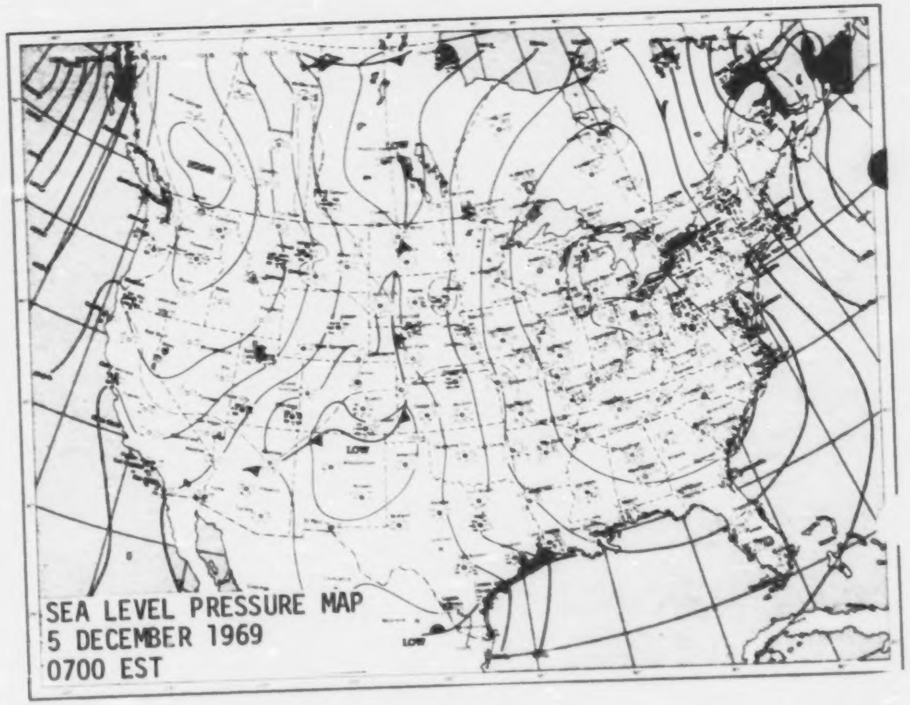
LAPPES series not in progress. No upper air wind or temperature measurements obtained by NAPCA personnel.

Synoptic Situation

Regional - High centered over Ohio dominating eastern half U.S. Surface wind light westerly. Closed 500-mb low off Maine coast with trough southward; ridge over Mississippi Valley. Wind at 500 mb NNW 25 mps.

Local - Noon low overcast. No helicopter temperature profiles or plume winds available; airport surface data listed in Table 2.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
5 DECEMBER 1969
0700 EST
LOW
LOW
LOW

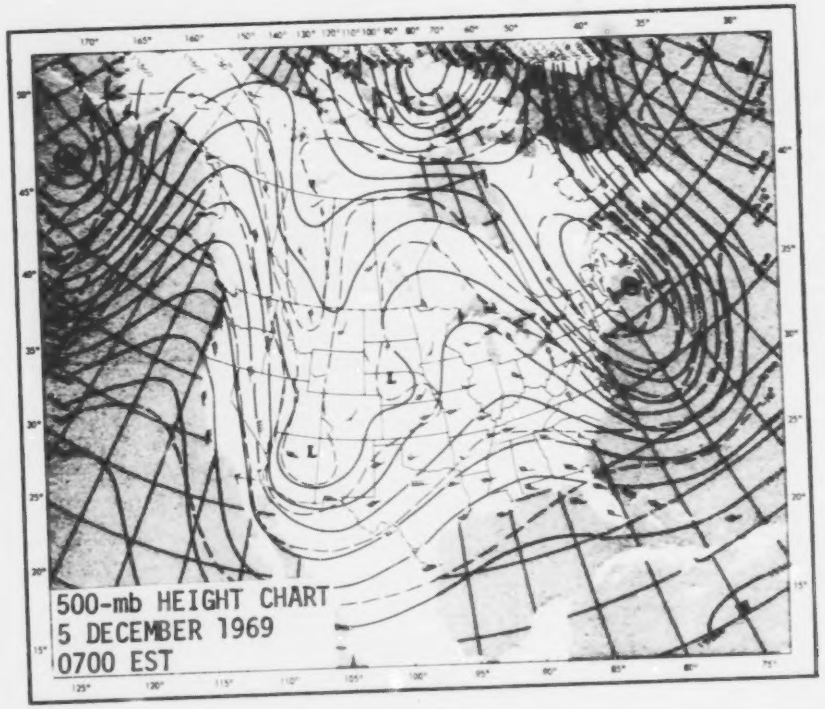

500-mb HEIGHT CHART
5 DECEMBER 1969
0700 EST
L
L

Table 1. (continued) DAILY EXPERIMENT SUMMARY

Keystone Cooling Tower Study 6 December 1969 Keystone Plume Unit No. 2

SO_2 Measurements

On-Stream Autoanalyzer GLC

Meteorological Measurements

Airport Surface Data

Other Participants

Illinois Institute of Technology Research Institute (helicopter measurements of cooling tower plumes)

Commentary

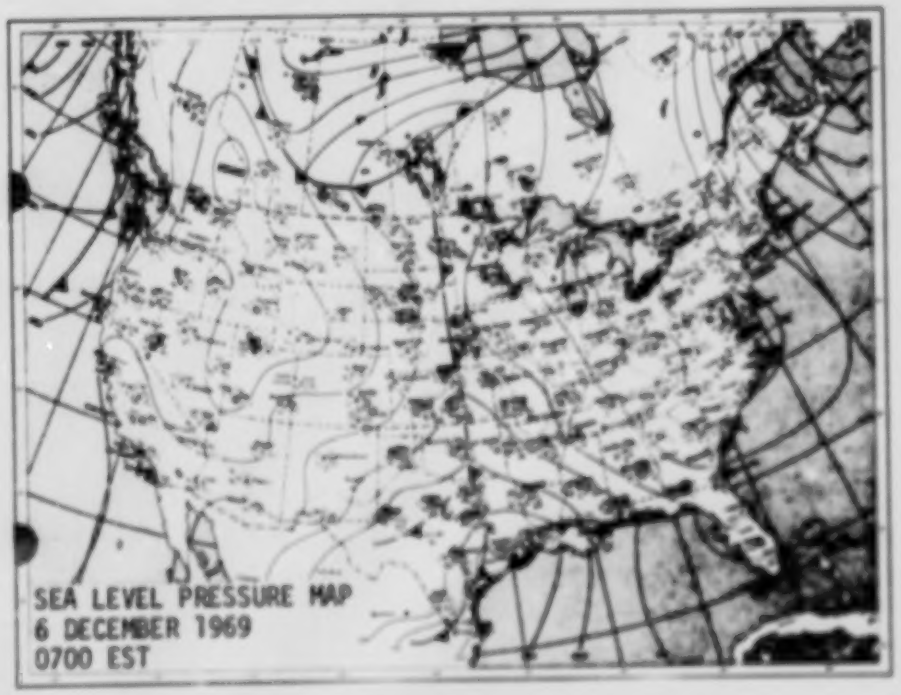
LAPPES series not in progress. No upper air wind or temperature measurements obtained by NAPCA personnel.

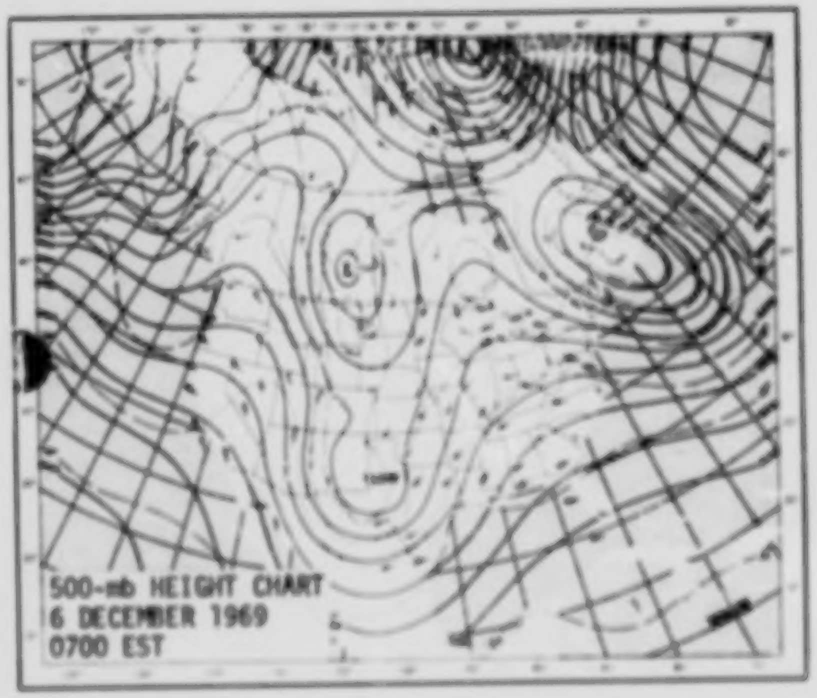
Synoptic Situation

Regional - High dominating eastern half U.S. with N-S ridge through Pennsylvania. Surface wind calm. Closed 500-mb low over New Brunswick with trough southward; ridge from Florida to Hudson Bay. Wind at 500 mb WNW 20 mps.

Local - Noon clear. No helicopter temperature profiles or plume winds available; airport surface data listed in Table 2.

Table 1 (continued). DAILY EXPERIMENT SUMMARY


SEA LEVEL PRESSURE MAP
6 DECEMBER 1969
0700 EST


500-mb HEIGHT CHART
6 DECEMBER 1969
0700 EST

SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

Table 2 presents hourly meteorological and SO_2 measurements made at Jimmy Stewart Airport for each day during 1967 and 1969 on which flights were made by the LAPPES helicopter or on which data were collected by LAPPES contractors. Although experimental activities lasted less than 12 hours in most instances, values for the entire 24 hours are included. Daily resultant winds, precipitation totals, average and peak SO_2 concentrations, and total radiation are also presented.

For the majority of days, SO_2 concentrations are not available for a few hours of the afternoon. This loss of data occurred while the Technicon AutoAnalyzer was switched from on-stream monitoring to bubbler analysis. Surface wind and precipitation measurements are not included for the October 1967 series because the Aerovane and weighing-bucket rain gage were not yet available.

Table 2. SURFACE WEATHER AND SO_2 OBSERVATIONS - JIMMY STEWART AIRPORT

Symbols

Time (EST) : Hour designating preceding 60 minutes.
Dir (°) : Hourly average surface wind direction in whole degrees of azimuth.
Speed (mps) : Hourly average surface wind speed to nearest tenth meter per second.
Temp (°C) : Hourly average temperature to nearest tenth degree Centigrade.
RH (%) : Hourly average relative humidity in whole percent.
P (cm) : Hourly total precipitation to nearest hundredth centimeter.
SO_2 Avg : Hourly average SO_2 concentration to nearest part per hundred million by volume.
SO_2 Peak : Hourly peak SO_2 concentration to nearest part per hundred million by volume.
Ly/min : Total sun and sky radiation to nearest hundredth langley per minute.
Day :
1. Daily resultant wind direction in whole degrees of azimuth and wind speed to nearest tenth meter per second.
2. Daily total precipitation to nearest hundredth centimeter.
3. Daily average SO_2 concentration to nearest part per hundred million. Daily average not computed if more than 6 hours' data were missing.
4. Daily peak SO_2 concentration to nearest part per hundred million. Daily peak not listed if more than 6 hours' data were missing.
5. Daily total sun and sky radiation in whole langleys.

Var : Surface wind direction variable.
Calm : Surface wind speed less than threshold of Aerovane.
--- : Missing data.

Table 2. SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

13 October 1967

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	SO_2(pphm) Peak	Ly/min
0100	---	---	0.6	100		-	-	
0200	---	---	0.0	100		-	-	
0300	---	---	0.0	100		-	-	
0400	---	---	- 0.6	100		-	-	
0500	---	---	- 1.1	100		-	-	
0600	---	---	- 1.1	100		-	-	
0700	---	---	0.6	99		-	-	---
0800	---	---	5.0	85		-	-	---
0900	---	---	8.9	60		-	-	---
1000	---	---	11.1	49		-	-	---
1100	---	---	11.7	47		-	-	---
1200	---	---	12.8	44		-	-	---
1300	---	---	14.4	41		-	-	.90
1400	---	---	15.6	37		-	-	.81
1500	---	---	16.1	36		-	-	.66
1600	---	---	15.6	38		-	-	.42
1700	---	---	13.9	45		-	-	.14
1800	---	---	12.2	50		-	-	.02
1900	---	---	11.1	53		-	-	
2000	---	---	11.1	56		-	-	
2100	---	---	11.1	59		-	-	
2200	---	---	10.6	66		-	-	
2300	---	---	10.6	68		-	-	
2400	---	---	10.6	80		-	-	
Day						-	-	---

16 October 1967

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	SO_2(pphm) Peak	Ly/min
0100	---	---	15.6	85		-	-	
0200	---	---	15.6	85		-	-	
0300	---	---	15.6	84		-	-	
0400	---	---	15.6	82		-	-	
0500	---	---	15.6	83		-	-	
0600	---	---	15.6	84		-	-	
0700	---	---	15.6	79		-	-	.02
0800	---	---	16.7	75		-	-	.09
0900	---	---	17.8	70		-	-	.27
1000	---	---	19.4	62		-	-	.35
1100	---	---	19.4	61		-	-	.20
1200	---	---	20.6	60		-	-	.46
1300	---	---	21.1	55		-	-	.44
1400	---	---	21.7	53		-	-	.31
1500	---	---	22.2	53		-	-	.31
1600	---	---	21.1	56		0	0	.13
1700	---	---	20.6	57		0	0	.06
1800	---	---	19.4	64		0	0	.01
1900	---	---	18.3	72		0	0	
2000	---	---	17.8	74		0	0	
2100	---	---	17.8	75		0	0	
2200	---	---	17.2	74		0	0	
2300	---	---	16.7	78		0	0	
2400	---	---	16.1	82		0	0	
Day						-	-	158

17 October 1967

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	SO_2(pphm) Peak	Ly/min
0100	---	---	15.6	85		0	0	
0200	---	---	15.0	85		0	0	
0300	---	---	15.0	83		0	0	
0400	---	---	13.9	88		0	0	
0500	---	---	13.9	85		1	3	
0600	---	---	13.9	80		1	4	
0700	---	---	13.9	77		1	3	.02
0800	---	---	14.4	73		0	0	.09
0900	---	---	16.1	68		0	0	.30
1000	---	---	17.2	62		0	0	.35
1100	---	---	18.9	58		0	0	.57
1200	---	---	20.6	52		0	0	.65
1300	---	---	21.1	50		0	0	.57
1400	---	---	21.1	50		0	0	.47
1500	---	---	21.7	51		0	0	.42
1600	---	---	20.6	52		0	0	.16
1700	---	---	20.0	56		0	0	.08
1800	---	---	18.9	61		0	0	.02
1900	---	---	18.3	63		0	0	
2000	---	---	17.8	67		0	0	
2100	---	---	17.2	69		0	0	
2200	---	---	17.2	71		0	0	
2300	---	---	17.2	70		0	1	
2400	---	---	16.7	71		1	1	
Day						0	4	222

20 October 1967

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	SO_2(pphm) Peak	Ly/min
0100	---	---	0.0	98		2	2	
0200	---	---	0.0	97		5	7	
0300	---	---	- 0.6	94		6	8	
0400	---	---	- 1.1	96		6	8	
0500	---	---	- 1.1	98		5	6	
0600	---	---	- 1.1	98		6	8	
0700	---	---	- 0.6	98		7	9	.06
0800	---	---	1.7	94		7	8	.25
0900	---	---	3.9	83		6	6	.46
1000	---	---	7.2	72		6	6	.67
1100	---	---	9.4	57		4	5	---
1200	---	---	10.6	50		1	3	---
1300	---	---	11.7	42		1	1	---
1400	---	---	12.2	41		-	-	---
1500	---	---	12.2	40		-	-	.29
1600	---	---	11.7	40		-	-	.10
1700	---	---	11.1	42		-	-	.01
1800	---	---	8.9	50		-	-	
1900	---	---	7.2	60		1	2	
2000	---	---	6.7	60		4	6	
2100	---	---	6.1	61		4	6	
2200	---	---	7.2	58		5	7	
2300	---	---	8.9	53		5	6	
2400	---	---	9.4	53		3	3	
Day						4	9	---

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

21 October 1967

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2 (pphm) Avg	SO_2 (pphm) Peak	Ly/min
0100	---	---	9.4	56		2	2	
0200	---	---	7.2	64		2	3	
0300	---	---	7.2	60		4	5	
0400	---	---	6.1	75		3	3	
0500	---	---	5.0	78		4	5	
0600	---	---	4.4	92		6	5	
0700	---	---	5.0	78		5	6	.02
0800	---	---	6.7	70		5	7	.19
0900	---	---	8.3	57		5	6	.44
1000	---	---	10.0	61		5	6	.66
1100	---	---	10.6	43		3	5	.82
1200	---	---	11.1	38		-	-	.87
1300	---	---	12.2	39		-	-	.87
1400	---	---	12.2	38		-	-	.78
1500	---	---	12.2	38		-	-	.42
1600	---	---	11.7	38		-	-	.42
1700	---	---	11.1	60		-	-	.17
1800	---	---	8.9	67		-	-	.03
1900	---	---	6.7	57		-	-	
2000	---	---	5.6	66		-	-	
2100	---	---	5.0	75		-	-	
2200	---	---	3.3	88		-	-	
2300	---	---	0.6	96		-	-	
2400	---	---	0.2	100		-	-	
Day						-	-	352

22 October 1967

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2 (pphm) Avg	SO_2 (pphm) Peak	Ly/min
0100	---	---	- 0.6	100		-	-	
0200	---	---	- 1.1	100		-	-	
0300	---	---	- 1.7	100		-	-	
0400	---	---	- 1.7	100		-	-	
0500	---	---	- 2.2	100		-	-	
0600	---	---	- 2.2	100		-	-	
0700	---	---	0.0	100		-	-	.03
0800	---	---	5.0	90		-	-	.23
0900	---	---	8.3	58		-	-	.45
1000	---	---	10.0	52		-	-	.66
1100	---	---	10.6	47		-	-	.81
1200	---	---	11.7	45		-	-	.88
1300	---	---	12.2	43		-	-	.88
1400	---	---	13.3	41		-	-	.80
1500	---	---	13.3	38		-	-	.64
1600	---	---	13.9	37		-	-	.43
1700	---	---	13.3	38		-	-	.18
1800	---	---	7.8	50		-	-	.03
1900	---	---	5.0	76		-	-	
2000	---	---	3.9	83		-	-	
2100	---	---	2.8	91		-	-	
2200	---	---	1.7	95		-	-	
2300	---	---	1.7	93		-	-	
2400	---	---	3.9	88		-	-	
Day						-	-	361

23 October 1967

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2 (pphm) Avg	SO_2 (pphm) Peak	Ly/min
0100	---	---	4.4	78		-	-	
0200	---	---	5.6	69		-	-	
0300	---	---	6.1	63		-	-	
0400	---	---	6.1	60		-	-	
0500	---	---	4.4	66		-	-	
0600	---	---	2.8	82		-	-	
0700	---	---	3.3	95		-	-	.02
0800	---	---	9.4	63		-	-	.18
0900	---	---	12.2	46		-	-	.43
1000	---	---	15.6	32		-	-	.64
1100	---	---	17.8	32		-	-	.79
1200	---	---	20.0	26		-	-	.87
1300	---	---	21.1	25		-	-	.88
1400	---	---	21.7	25		-	-	.76
1500	---	---	21.7	25		-	-	.61
1600	---	---	20.0	30		-	-	.40
1700	---	---	17.2	32		-	-	.17
1800	---	---	15.0	39		0	0	.03
1900	---	---	13.3	47		0	0	
2000	---	---	12.8	53		0	0	
2100	---	---	12.2	57		0	0	
2200	---	---	12.2	57		0	0	
2300	---	---	11.7	59		0	0	
2400	---	---	11.1	61		0	0	
Day						-	-	343

24 October 1967

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2 (pphm) Avg	SO_2 (pphm) Peak	Ly/min
0100	---	---	11.1	63		-	-	
0200	---	---	10.6	64		-	-	
0300	---	---	10.0	67		-	-	
0400	---	---	9.4	68		-	-	
0500	---	---	8.9	71		-	-	
0600	---	---	8.3	72		-	-	
0700	---	---	8.3	73		-	-	.02
0800	---	---	10.0	72		-	-	.14
0900	---	---	13.3	60		0	0	.33
1000	---	---	15.6	52		0	0	.54
1100	---	---	17.2	47		0	0	.76
1200	---	---	18.3	45		0	0	.78
1300	---	---	18.9	45		0	1	.74
1400	---	---	18.9	48		-	-	.66
1500	---	---	18.9	42		-	-	.50
1600	---	---	17.2	44		-	-	.25
1700	---	---	16.1	47		-	-	.10
1800	---	---	14.4	60		0	0	.02
1900	---	---	13.3	67		0	0	
2000	---	---	13.3	66		0	0	
2100	---	---	13.3	65		0	0	
2200	---	---	13.3	66		0	0	
2300	---	---	13.3	67		0	0	
2400	---	---	13.9	67		0	0	
Day						-	-	290

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

26 October 1967

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2 (pphm) Avg	Peak	Ly/ min
0100	---	---	1.7	76		2	5	
0200	---	---	2.2	75		2	3	
0300	---	---	2.8	73		4	5	
0400	---	---	2.8	72		3	5	
0500	---	---	2.8	63		3	3	
0600	---	---	2.8	59		1	2	
0700	---	---	3.3	62		0	1	
0800	---	---	3.3	63		2	3	.02
0900	---	---	3.9	62		1	3	.07
1000	---	---	4.4	50		1	2	.15
1100	---	---	5.0	56		1	2	.21
1200	---	---	5.6	56		1	2	.31
1300	---	---	5.6	53		1	2	.25
1400	---	---	6.1	52		-	-	.36
1500	---	---	6.7	50		-	-	.36
1600	---	---	6.1	50		-	-	.25
1700	---	---	5.6	53		0	2	.17
1800	---	---	3.3	66		1	1	.02
1900	---	---	1.1	77		1	1	
2000	---	---	0.0	90		1	3	
2100	---	---	0.0	90		3	5	
2200	---	---	0.0	89		2	3	
2300	---	---	0.0	93		2	3	
2400	---	---	0.6	93		1	2	
Day						2	5	132

27 October 1967

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2 (pphm) Avg	Peak	Ly/ min
0100	---	---	1.2	--		6	9	
0200	---	---	1.7	--		6	8	
0300	---	---	2.2	--		3	5	
0400	---	---	2.2	--		1	2	
0500	---	---	3.3	--		1	2	
0600	---	---	4.4	--		1	2	
0700	---	---	5.0	--		1	1	.03
0800	---	---	6.1	--		1	1	.16
0900	---	---	8.3	--		1	2	.29
1000	---	---	10.0	--		1	2	.35
1100	---	---	10.6	--		1	1	.53
1200	---	---	11.1	--		1	2	.38
1300	---	---	11.7	--		-	-	.33
1400	---	---	12.2	--		-	-	.37
1500	---	---	12.0	--		-	-	.43
1600	---	---	12.2	--		-	-	.12
1700	---	---	11.0	--		1	1	.07
1800	---	---	6.1	--		1	2	.02
1900	---	---	5.6	--		2	3	
2000	---	---	5.6	--		2	3	
2100	---	---	5.8	--		1	2	
2200	---	---	5.0	--		1	2	
2300	---	---	4.4	--		1	1	
2400	---	---	3.9	--		1	1	
Day						2	9	150

28 October 1967

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2 (pphm) Avg	Peak	Ly/ min
0100	---	---	3.9	65		1	1	
0200	---	---	3.3	69		1	2	
0300	---	---	2.8	72		3	3	
0400	---	---	2.2	80		3	5	
0500	---	---	1.7	92		3	3	
0600	---	---	1.7	94		3	5	
0700	---	---	1.1	97		4	5	.02
0800	---	---	1.7	95		5	6	.15
0900	---	---	2.8	85		6	6	.16
1000	---	---	3.9	75		6	6	.27
1100	---	---	4.4	70		5	5	.44
1200	---	---	4.4	67		-	-	.43
1300	---	---	4.4	73		-	-	.22
1400	---	---	5.0	70		-	-	.32
1500	---	---	5.0	67		[illegible]	-	.18
1600	---	---	4.4	68		[illegible]	5	.19
1700	---	---	3.3	82		[illegible]	3	.06
1800	---	---	2.2	94		2	2	.02
1900	---	---	2.8	75		8	5	
2000	---	---	0.6	91		1	1	
2100	---	---	-1.1	100		1	2	
2200	---	---	-1.7	100		2	3	
2300	---	---	-1.1	100		4	6	
2400	---	---	-0.6	100		5	6	
Day						3	8	142

29 October 1967

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2 (pphm) Avg	Peak	Ly/ min
0100	---	---	-1.7	100		4	5	
0200	---	---	-2.2	100		3	5	
0300	---	---	-2.8	100		3	4	
0400	---	---	-3.3	100		4	5	
0500	---	---	-3.9	99		4	5	
0600	---	---	-4.4	94		4	5	
0700	---	---	-1.7	96		3	5	.03
0800	---	---	1.7	92		6	17	.16
0900	---	---	5.6	70		4	5	.37
1000	---	---	7.2	54		-	-	.59
1100	---	---	8.3	47		-	-	.77
1200	---	---	9.4	42		-	-	.85
1300	---	---	10.6	36		-	-	.88
1400	---	---	11.1	35		-	-	.73
1500	---	---	11.1	35		-	-	.59
1600	---	---	11.1	35		0	0	.39
1700	---	---	9.4	38		0	0	.14
1800	---	---	6.7	50		0	0	.03
1900	---	---	3.9	61		0	0	
2000	---	---	2.8	70		0	0	
2100	---	---	2.2	70		0	1	
2200	---	---	2.2	78		1	2	
2300	---	---	2.8	78		1	1	
2400	---	---	3.3	76		0	0	
Day						2	17	325

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

30 October 1967

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/min
0100	---	---	3.3	74		0	0	
0200	---	---	3.3	75		0	0	
0300	---	---	3.3	73		0	0	
0400	---	---	3.9	73		0	0	
0500	---	---	3.3	75		0	0	
0600	---	---	3.3	76		0	0	
0700	---	---	2.8	80		0	1	.00
0800	---	---	4.4	76		1	1	.14
0900	---	---	7.8	60		1	1	.37
1000	---	---	11.1	45		1	1	.58
1100	---	---	14.4	38		0	1	.73
1200	---	---	15.6	35		0	0	.80
1300	---	---	17.2	32		0	0	.79
1400	---	---	18.3	28		-	-	.71
1500	---	---	18.9	28		-	-	.54
1600	---	---	18.3	31		-	-	.34
1700	---	---	16.1	37		-	-	.12
1800	---	---	13.3	43		0	0	.00
1900	---	---	11.1	51		0	1	
2000	---	---	10.0	54		1	1	
2100	---	---	9.4	57		1	1	
2200	---	---	9.4	57		1	1	
2300	---	---	9.4	55		1	1	
2400	---	---	8.9	57		1	2	
Day						0	2	307

31 October 1967

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/min
0100	---	---	8.9	56		1	2	
0200	---	---	9.4	56		1	1	
0300	---	---	8.9	62		1	1	
0400	---	---	8.9	64		1	2	
0500	---	---	8.9	66		2	2	
0600	---	---	8.9	70		2	2	
0700	---	---	8.9	68		1	1	
0800	---	---	10.0	64		1	1	.08
0900	---	---	12.8	67		1	1	.20
1000	---	---	14.4	48		0	0	.34
1100	---	---	15.6	45		0	0	.43
1200	---	---	16.1	42		1	2	.38
1300	---	---	16.7	42		1	2	.25
1400	---	---	17.2	42		-	-	.24
1500	---	---	17.8	41		-	-	.32
1600	---	---	17.2	43		-	-	.13
1700	---	---	16.7	50		1	1	.03
1800	---	---	16.1	50		1	3	
1900	---	---	14.4	53		1	1	
2000	---	---	13.9	54		1	1	
2100	---	---	13.3	58		1	2	
2200	---	---	12.2	65		1	2	
2300	---	---	12.2	64		2	2	
2400	---	---	11.7	70		2	2	
Day						1	3	144

8 April 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/min
0100	095	0.8	3.3	89		3	4	
0200	090	0.9	2.2	96		3	3	
0300	088	0.5	1.6	98		3	3	
0400	086	0.9	1.1	98		3	3	
0500	086	1.3	0.5	98		3	3	
0600	079	1.3	- 0.5	98		3	3	
0700	074	1.2	0.5	97		3	3	.13
0800	074	0.6	5.0	82		4	6	.38
0900	199	0.9	11.1	51		6	6	.64
1000	220	2.5	14.9	33		5	6	.87
1100	243	2.4	16.6	27		8	10	.98
1200	257	2.7	18.3	23		11	15	1.07
1300	283	3.4	20.5	23		6	10	1.01
1400	264	2.9	21.1	25		4	6	.86
1500	278	4.2	21.1	25		5	-	.78
1600	283	3.9	21.1	26		-	-	.62
1700	303	4.0	21.1	26		-	-	.34
1800	311	2.5	20.5	27		-	-	.16
1900	343	0.8	17.7	36		1	-	.01
2000	046	1.0	13.3	51		1	1	
2100	085	1.0	11.6	59		1	1	
2200	079	1.5	11.6	57		1	2	
2300	082	1.5	11.6	55		1	1	
2400	086	2.1	11.6	56		1	1	
Day	290	0.5				4	15	471

9 April 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/min
0100	102	1.2	11.6	53		1	1	
0200	086	1.6	12.2	50		2	2	
0300	062	2.3	11.6	51		2	2	
0400	079	1.6	10.0	58		2	2	
0500	086	2.1	10.0	58		2	2	
0600	089	2.4	10.0	56		2	2	
0700	077	2.6	11.6	54		2	2	.06
0800	078	2.3	13.3	47		2	2	.26
0900	122	2.4	16.6	39		1	-	.52
1000	160	5.1	18.3	36		2	2	.66
1100	152	4.8	19.4	32		3	3	.97
1200	171	4.6	21.1	30		1	3	1.09
1300	185	4.4	23.3	27		1	1	1.12
1400	225	7.6	24.4	25		0	1	1.11
1500	221	8.7	24.9	21		0	0	.85
1600	224	7.5	24.4	22		0	0	.45
1700	225	7.1	23.8	25		0	0	.24
1800	178	5.4	22.7	27		0	0	.09
1900	140	4.2	21.1	32		2	-	.01
2000	144	4.2	19.4	34		2	3	
2100	139	4.8	19.4	35		2	4	
2200	153	4.0	19.4	34		3	4	
2300	252	3.3	18.3	43		1	1	
2400	235	2.6	16.6	67		1	1	
Day	174	2.5				1	4	446

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

10 April 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/ min
0100	216	3.6	16.1	78	.03	4	6	
0200	205	3.4	14.4	94	.05	3	3	
0300	220	3.0	13.8	97		3	3	
0400	216	4.1	13.8	95		2	2	
0500	212	3.0	14.4	93		2	3	
0600	199	3.4	14.4	92		3	3	
0700	217	3.9	14.9	84		2	2	.03
0800	224	6.2	14.9	70		1	2	.06
0900	213	5.5	16.1	63		1	2	.07
1000	218	7.3	16.6	54		2	3	.07
1100	230	8.0	15.5	75	.05	0	0	.15
1200	232	6.6	14.4	94	.15	0	0	.15
1300	236	7.9	13.8	90	.13	0	0	.13
1400	229	8.1	14.9	95		2	2	.58
1500	259	7.1	16.1	79		1	2	.36
1600	290	8.5	16.1	57		0	0	.43
1700	282	8.6	14.9	54		0	0	.28
1800	288	8.2	13.8	52		0	0	.19
1900	291	5.6	12.7	57		0	0	.03
2000	285	5.2	11.6	66		0	0	
2100	283	5.4	11.1	69		0	0	
2200	277	5.5	10.5	75		0	0	
2300	272	5.1	10.0	83		0	0	
2400	311	5.4	8.3	93		0	0	
Day	250	4.9			.41	1	6	162

11 April 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/ min
0100	326	3.9	6.1	92		0	0	
0200	331	3.4	5.5	91		0	0	
0300	327	3.0	5.0	86		0	0	
0400	317	2.3	4.4	86		0	0	
0500	318	1.3	4.4	87		0	0	
0600	325	1.8	4.4	83		0	0	
0700	326	2.6	4.4	78		0	0	.05
0800	315	3.5	4.4	66		0	0	.17
0900	328	3.5	5.0	64		0	0	.30
1000	313	3.4	5.5	62		0	0	.50
1100	292	3.4	7.2	58		0	0	1.22
1200	303	3.4	8.3	51		1	2	1.19
1300	310	3.8	10.5	45		1	2	1.22
1400	288	3.2	11.1	42		2	2	1.17
1500	314	3.9	11.6	39		0	0	1.03
1600	327	4.3	12.2	36		0	0	.81
1700	322	3.8	11.6	35		0	0	.53
1800	320	3.4	11.1	35		0	0	.26
1900	319	2.2	9.4	37		0	0	.05
2000	320	1.8	7.7	40		0	0	
2100	327	3.0	6.6	46		0	0	
2200	332	2.6	5.0	51		0	0	
2300	019	1.6	3.3	60		0	1	
2400	016	1.4	1.1	75		1	1	
Day	320	2.8				5	2	534

12 April 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/ min
0100	028	0.4	0.0	83		1	1	
0200	036	0.5	- 0.5	91		1	1	
0300		Calm	- 1.6	97		2	3	
0400	046	0.4	- 2.2	97		1	1	
0500	050	0.4	- 2.7	97		1	1	
0600	047	0.9	- 3.3	97		1	1	.03
0700	016	0.6	- 1.1	91		2	2	.23
0800	099	2.6	2.7	65		2	2	.45
0900	065	3.7	5.0	50		2	2	.73
1000	074	3.1	7.2	39		1	1	.96
1100	060	2.2	9.4	32		0	1	1.12
1200	064	2.8	10.5	28		0	0	1.23
1300	Var	1.8	11.6	26		0	0	1.24
1400	Var	2.0	12.7	25		0	0	1.21
1500	Var	1.8	13.3	22		0	0	1.04
1600	Var	1.8	13.8	21		0	0	.82
1700	014	1.2	13.8	20		0	0	.56
1800	072	1.3	13.3	20		0	0	.26
1900	053	1.3	11.6	20		0	0	.04
2000	068	1.0	8.8	28		0	1	
2100	069	0.9	7.2	32		0	0	
2200	091	1.0	6.1	38		0	0	
2300	090	1.1	5.0	40		0	0	
2400	090	1.8	6.1	38		0	1	
Day	066	1.0				0	3	595

14 April 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/ min
0100	126	2.3	11.1	41		0	0	
0200	133	2.0	10.5	42		0	0	
0300	095	0.8	9.4	45		1	1	
0400	077	0.4	8.3	50		1	2	
0500	097	0.6	8.3	52		1	1	
0600	119	0.9	8.3	52		1	2	
0700	093	0.6	8.8	53		1	1	.09
0800	110	1.0	11.1	52		1	1	.24
0900	112	1.6	13.8	45		1	1	.49
1000	134	1.3	15.5	41		0	0	.46
1100	131	1.7	16.1	30		0	0	.51
1200	155	2.9	17.2	36		0	2	.65
1300	159	2.0	17.7	34		2	3	.67
1400	136	2.4	19.3	33		2	-	.80
1500	102	3.3	18.3	34		-	-	.32
1600	105	3.8	18.8	34		-	-	.44
1700	109	4.4	18.3	34		0	1	.29
1800	116	4.6	17.2	35		0	0	.09
1900	123	4.6	16.1	38		0	0	.02
2000	122	3.8	14.9	41		0	0	
2100	123	4.4	14.4	44		0	0	
2200	173	4.3	13.8	45		0	0	
2300	120	4.3	13.3	47		0	0	
2400	126	3.8	12.7	48		0	0	
Day	121	2.5				1	3	280

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

16 April 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/ min
0100	126	3.0	12.7	58		0	0	
0200	129	4.1	12.2	66		1	1	
0300	112	3.2	11.6	72		1	1	
0400	121	3.8	12.2	66		1	1	
0500	132	3.6	12.2	64		1	1	
0600	136	4.5	12.2	64		1	1	
0700	137	5.3	12.2	67		0	0	.03
0800	139	5.5	12.2	73		0	0	.05
0900	147	4.9	11.1	91	.05	0	0	.09
1000	144	5.3	10.5	98	.03	0	0	.15
1100	134	5.0	10.5	98		0	0	.20
1200	149	4.1	11.6	98		0	0	.29
1300	149	3.4	12.7	96		0	1	.25
1400	136	3.1	13.3	96	.05	1	2	.29
1500	133	3.0	13.3	98		0	0	.19
1600	139	3.4	13.3	96		0	0	.17
1700	145	3.5	13.8	94		1	1	.24
1800	166	4.1	14.4	88		1	1	.09
1900	130	3.3	13.8	88		1	1	.05
2000	125	4.6	13.3	91		1	1	
2100	129	4.3	13.3	93		1	1	
2200	137	4.4	13.3	94		1	1	
2300	159	3.9	13.3	92		1	1	
2400	159	3.3	13.3	93		1	3	
Day	137	4.0			.13	0	3	132

17 April 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/ min
0100	090	0.5	8.8	97		2	2	
0200	100	0.3	8.3	97		1	2	
0300	095	0.6	7.2	97		1	2	
0400	090	0.8	7.2	97		1	1	
0500	085	0.7	6.6	97		1	2	
0600	089	0.8	7.2	97		2	3	
0700	089	0.8	9.4	95		4	5	.17
0800	149	0.8	12.7	81		6	6	.43
0900	212	2.2	17.2	63		3	5	.70
1000	242	4.1	19.4	53		3	6	.89
1100	238	4.4	20.5	44		4	6	1.02
1200	237	4.1	22.2	38		2	2	1.12
1300	229	3.8	23.3	35		2	2	1.17
1400	219	4.3	22.8	31		1	1	1.11
1500	227	5.1	24.4	29		0	0	.98
1600	227	4.7	24.4	27		0	0	.77
1700	238	3.3	24.9	26		0	0	.50
1800	241	1.8	24.4	30		0	0	.19
1900	255	0.3	21.6	37		2	2	.06
2000	100	0.9	18.3	46		1	2	
2100	112	2.0	17.2	50		0	0	
2200	104	2.0	17.2	50		1	2	
2300	102	3.0	18.3	56		1	2	
2400	106	3.1	18.8	55		1	2	
Day	213	1.6				1	6	546

18 April 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/ min
0100	176	4.1	19.4	48		0	0	
0200	176	4.4	19.4	47		0	0	
0300	173	3.5	18.8	50		0	0	
0400	157	3.7	17.7	54		0	1	
0500	150	4.7	17.2	55		1	2	
0600	144	2.7	17.2	58		1	1	.01
0700	148	2.5	17.2	60		1	1	.09
0800	149	3.4	17.7	60		1	2	.08
0900	183	1.3	18.3	61		1	2	.16
1000	159	1.7	18.8	60		1	2	.18
1100	207	2.3	18.8	64		1	2	.21
1200	221	1.3	18.3	75		0	0	.27
1300	var	1.4	18.3	77		1	1	.45
1400	147	4.1	19.4	68		1	1	.45
1500	149	3.0	21.6	60		1	2	.24
1600	147	4.2	21.6	56		0	1	.14
1700	116	5.3	20.5	62		0	0	.07
1800	129	4.9	20.0	67		0	0	
1900	116	6.5	17.7	83	.38	0	0	
2000	335	2.5	13.8	97	.94	0	0	
2100	242	1.6	13.3	97		0	0	
2200	307	2.1	12.2	97		0	0	
2300	019	1.6	10.0	97	.03	0	0	
2400	044	1.7	8.8	97		0	0	
Day	143	2.2			1.35	0	2	142

20 April 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/ min
0100	109	1.7	12.2	57		2	2	
0200	177	1.7	13.8	39		2	2	
0300	205	2.5	13.3	50		1	1	
0400	216	2.5	12.7	57		1	1	
0500	212	1.7	12.2	63		1	1	
0600	210	1.3	12.2	67		1	1	.03
0700	211	2.5	17.2	63		2	2	.24
0800	220	5.3	18.8	53		2	3	.21
0900	229	6.0	17.2	53		0	1	.12
1000	204	5.1	15.5	91		1	1	.12
1100	237	4.7	14.4	93	.13	0	0	.14
1200	214	3.9	14.4	100	.03	1	1	.25
1300	216	4.4	14.4	100	.38	-	-	.15
1400	216	5.5	13.3	100	.51	-	-	.09
1500	202	6.2	13.3	100	.36	-	-	.10
1600	211	7.2	13.3	100	.13	0	0	.12
1700	216	6.6	14.4	93	.03	0	0	.21
1800	253	5.8	12.2	100	.23	0	0	.09
1900	266	2.1	12.2	100		0	0	.09
2000	243	2.2	11.6	100	.15	1	1	
2100	var	1.0	11.1	100		0	0	
2200	268	2.0	10.0	100		0	0	
2300	272	2.5	10.0	100		0	0	
2400	268	2.1	10.0	100		0	0	
Day	221	3.3			1.95	1	3	117

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

30 April 1969

Time	Dir	Speed	Temp	RH	P	SO_2(pphm)		Ly/
EST	(°)	(mps)	(°C)	(%)	(cm)	Avg	Peak	min
0100	284	1.5	5.0	100		3	3	
0200	290	0.7	4.4	100		2	2	
0300		Calm	3.3	100		2	2	
0400	310	0.4	3.3	100		1	1	
0500	334	1.7	3.8	100		1	1	
0600	332	1.5	3.8	100		1	1	.04
0700	021	2.5	4.4	100		1	1	.21
0800	014	3.4	4.4	87		0	0	.38
0900	025	2.7	4.4	87		0	0	.41
1000	046	2.6	6.1	79		0	0	.75
1100	027	1.8	8.8	63		0	0	.96
1200	040	2.5	10.0	55		0	0	1.15
1300	359	1.7	11.1	50		0	0	.63
1400	357	1.5	12.2	50		0	0	.87
1500	308	2.4	12.2	43		0	0	1.15
1600	Var	1.7	13.8	41		0	0	.37
1700	Var	1.2	12.7	39		0	0	.33
1800	291	1.0	12.2	39		0	0	.19
1900	235	1.8	11.6	45		0	0	.09
2000	230	0.7	10.0	53		1	1	
2100	225	0.8	7.2	67		2	2	
2200	230	0.3	5.5	75		2	2	
2300	235	0.3	4.4	89		2	2	
2400		Calm	3.3	97		2	2	
Day	351	0.8				0	3	450

1 May 1969

Time	Dir	Speed	Temp	RH	P	SO_2(pphm)		Ly/
EST	(°)	(mps)	(°C)	(%)	(cm)	Avg	Peak	min
0100	095	0 1	2.2	100		1	2	
0200	085	0.4	1.6	100		1	1	
0300	080	0.7	1.1	100		1	1	
0400	069	1.2	1.1	100		1	1	
0500	080	1.2	1.6	91		1	1	
0600	083	1.3	1.6	89		1	1	.05
0700	077	1.9	2.2	89		1	1	.23
0800	086	2.7	5.5	83		-	-	.47
0900	084	2.3	8.8	55		-	-	.71
1000	085	1.3	11.6	46		-	-	.90
1100	Var	1.6	13.3	40		-	-	1.05
1200	Var	1.5	14.4	39		-	-	1.13
1300	Var	1.7	15.5	37		-	-	1.16
1400	Var	1.8	16.6	43		-	-	1.08
1500	Var	1.7	16.6	31		-	-	.97
1600	Var	0.8	17.7	29		-	-	.78
1700	Var	1.0	17.7	27		-	-	.55
1800	Var	0.9	17.2	29		-	-	.31
1900	016	1.7	16.1	30		1	2	.09
2000	016	1.0	13.3	39		1	1	
2100	090	0.4	10.0	59		1	1	
2200	086	0.9	7.7	69		1	1	
2300	095	0.6	7.2	69		1	1	
2400	076	1.3	6.1	79		1	1	
Day	073	0.7				-	-	569

2 May 1969

Time	Dir	Speed	Temp	RH	P	SO_2(pphm)		Ly/
EST	(°)	(mps)	(°C)	(%)	(cm)	Avg	Peak	min
0100	117	1.3	5.5	91		1	1	
0200	145	1.4	6.1	75		2	2	
0300	107	0.6	8.3	63		1	1	
0400	159	0.3	6.6	73		0	0	
0500	066	0.3	5.5	79		1	1	
0600	060	0.4	4.4	87		1	1	.04
0700	060	0.4	6.6	89		1	1	.23
0800	112	0.9	11.1	65		1	1	.47
0900	197	2.2	14.4	50		1	2	.70
1000	234	1.8	16.1	45		1	2	.88
1100	205	2.3	17.7	42		1	1	1.00
1200	235	2.7	19.4	33		1	1	1.07
1300	244	3.2	20.5	33		1	1	1.10
1400	268	3.5	21.6	31		1	1	1.05
1500	261	4.0	22.2	29		-	-	.94
1600	240	3.7	23.3	27		-	-	.76
1700	244	4.0	23.3	27		-	-	.55
1800	235	3.6	22.7	25		-	-	.31
1900	224	2.2	21.6	27		-	-	.10
2000	230	1.7	17.7	35		0	0	
2100		Calm	14.4	45		1	1	
2200	105	0.4	12.2	53		0	0	
2300		Calm	11.1	59		0	0	
2400		Calm	10.0	65		0	0	
Day	229	1.2				1	2	551

3 May 1969

Time	Dir	Speed	Temp	RH	P	SO_2(pphm)		Ly/
EST	(°)	(mps)	(°C)	(%)	(cm)	Avg	Peak	min
0100	210	0.8	8.8	77		0	0	
0200	220	0.9	8.8	75		1	1	
0300	231	0.5	8.8	75		1	1	
0400	216	0.6	8.3	81		1	1	
0500	226	1.2	8.3	83		1	2	
0600	217	1.2	8.3	83		2	2	.04
0700	223	2.5	10.0	79		3	4	.20
0800	216	3.5	13.3	65		4	4	.43
0900	229	5.0	16.6	56		5	5	.66
1000	246	5.7	20.0	51		6	11	.81
1100	260	6.1	22.2	50		7	10	.91
1200	267	7.2	23.3	45		3	8	1.03
1300	281	7.4	24.4	43		2	4	1.07
1400	276	6.4	24.9	43		-	-	.98
1500	283	7.1	24.9	41		-	-	.84
1600	271	7.2	24.4	39		-	-	.73
1700	269	6.5	24.4	39		-	-	.43
1800	284	5.7	24.4	39		0	0	.24
1900	284	4.4	22.7	41		0	0	.07
2000	286	2.5	20.0	45		0	0	
2100	302	1.7	18.8	50		0	0	
2200	293	0.6	17.7	55		0	0	
2300		Calm	14.9	75		0	0	
2400	Var	0.4	13.3	95		0	0	
Day	264	3.2				2	11	507

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

5 May 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm)		Ly/ min
						Avg	Peak	
0100		Calm	11.1	75		0	0	
0200	019	0.7	9.4	93		0	0	
0300	074	0.6	7.7	100		0	1	
0400	063	0.5	6.6	100		0	0	
0500	056	0.3	6.6	100		0	0	
0600	094	1.5	6.6	100		0	0	.04
0700	084	2.8	8.8	100		0	0	.21
0800	067	3.4	12.2	69		0	0	.43
0900	064	3.8	14.9	57		0	0	.67
1000	066	2.1	17.7	50		0	0	.87
1100	046	3.0	20.0	39		0	0	1.01
1200	025	3.4	21.1	33		0	0	1.08
1300	360	3.0	22.2	33		0	0	1.09
1400	352	3.4	23.8	33		-	-	1.05
1500	353	3.2	24.4	32		-	-	.94
1600	336	3.2	24.4	32		-	-	.72
1700	334	2.5	23.3	33		-	-	.43
1800	339	2.3	24.4	33		-	-	.23
1900	002	2.2	19.4	39		1	2	.07
2000	020	1.4	16.1	57		1	2	
2100	038	1.4	14.4	65		2	2	
2200	049	2.0	14.4	65		2	2	
2300	049	1.3	13.8	67		1	2	
2400	080	0.6	11.6	77		1	2	
Day	028	1.6				0	2	544

6 May 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm)		Ly/ min
						Avg	Peak	
0100	080	0.5	10.5	89		0	0	
0200	075	0.4	9.4	63		0	0	
0300	070	0.8	8.3	100		0	1	
0400	088	1.8	9.4	83		0	0	
0500	076	1.7	8.8	79		0	0	
0600	084	1.7	9.4	65		0	0	.04
0700	079	2.1	12.2	59		0	0	.21
0800	083	2.6	14.4	50		0	0	.43
0900	072	1.8	17.7	45		0	0	.67
1000	080	1.6	20.5	41		0	0	.87
1100	048	2.7	22.2	41		0	0	1.01
1200	Var	1.8	23.8	37		0	0	1.08
1300	Var	1.8	23.8	36		0	0	1.09
1400	Var	1.5	25.5	34		-	-	1.05
1500	Var	1.8	24.9	33		-	-	.94
1600	012	1.8	24.9	33		-	-	.72
1700	302	1.8	24.4	34		-	-	.43
1800	289	1.9	22.7	40		-	-	.23
1900	275	1.2	18.8	57		1	2	.07
2000		Calm	20.5	45		1	2	
2100	090	0.1	17.2	67		2	2	
2200	090	0.5	15.5	77		2	2	
2300	080	0.6	13.8	85		1	2	
2400	080	0.8	13.3	93		1	2	
Day	060	0.7				0	2	531

7 May 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm)		Ly/ min
						Avg	Peak	
0100	080	1.0	12.7	93		1	1	
0200	075	1.1	12.2	100		1	1	
0300	065	0.8	12.7	89		4	5	
0400		Calm	14.4	71		3	3	
0500	080	1.0	14.4	85		3	3	
0600	074	1.2	14.4	79		2	2	.05
0700	050	1.1	16.6	69		2	2	.15
0800	093	1.6	18.8	63		2	2	.30
0900	093	1.4	22.2	47		1	2	.47
1000	203	3.4	24.4	47		3	3	.73
1100	226	4.3	25.5	47		3	4	.85
1200	235	5.3	26.6	41		2	3	1.03
1300	228	6.9	26.6	41		3	3	.77
1400	243	7.5	27.7	37		2	2	.97
1500	242	7.4	27.2	37				.84
1600	236	6.2	26.6	39		-	-	.56
1700	244	5.8	24.9	43		-	-	.35
1800	242	2.4	21.1	53		-	-	.08
1900	353	5.5	16.6	100		-	-	
2000	011	3.4	15.5	100	.13	0	0	
2100	012	1.3	15.5	100	.25	0	0	
2200	095	2.7	15.5	100	.03	0	0	
2300	099	2.2	15.5	100		0	0	
2400	104	1.7	15.5	100		0	0	
Day	234	1.2			.41	2	5	428

8 May 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm)		Ly/ min
						Avg	Peak	
0100	128	1.8	15.5	98		0	0	
0200	098	3.1	15.5	97		0	0	
0300	099	2.2	15.5	95		0	0	
0400	080	1.3	15.5	83		0	1	
0500	145	3.0	15.5	83		1	1	
0600	153	4.6	15.5	83		1	1	.04
0700	152	3.5	17.7	81		1	1	.05
0800	161	3.3	18.8	69		0	0	.09
0900	213	3.4	17.7	85	.38	0	0	.12
1000	210	3.7	17.7	95	.05	1	1	.21
1100	204	6.7	18.3	100	.05	1	1	.29
1200	215	9.5	19.4	75		0	0	.67
1300	214	8.3	18.8	85		0	1	.36
1400	210	6.6	20.0	87		0	0	.34
1500	204	6.9	21.1	79		0	0	.43
1600	204	7.4	20.0	83		0	0	.29
1700	205	5.5	17.7	100	.08	1	1	.06
1800	176	2.8	17.7	100	.08	0	1	.03
1900	221	4.4	17.7	100		0	0	.04
2000	214	5.0	17.2	100		0	0	
2100	207	6.9	16.6	97		0	1	
2200	206	5.9	17.7	89		1	1	
2300	220	8.3	16.6	100	.05	1	1	
2400	214	6.3	15.5	77	1.02	1	1	
Day	198	4.3			1.71	0	1	181

Table 2 (continued). SURFACE WEATHER AND SO$_2$ OBSERVATIONS AT JIMMY STEWART AIRPORT

9 May 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO$_2$(pphm)		Ly/ min
						Avg	Peak	
0100	210	4.0	14.9	100	.23	0	0	
0200	212	4.3	14.4	100	.13	0	0	
0300	188	3.8	13.8	100	.30	0	0	
0400	196	3.3	13.3	100	.20	0	0	
0500	212	3.2	13.3	100	.10	0	0	
0600	206	2.9	13.3	100	.05	0	0	
0700	202	2.9	13.8	100	.08	0	0	.06
0800	214	4.8	14.4	100		0	0	.12
0900	211	4.4	14.9	100	.03	0	0	.13
1000	233	5.2	15.5	83		1	1	.31
1100	232	6.5	13.3	100	.13	1	1	.17
1200	232	11.6	12.2	75	.03	1	1	.50
1300	237	10.7	11.1	65		1	1	.30
1400	239	8.9	11.1	75		1	1	.25
1500	234	8.9	10.0	100	.10	1	1	.17
1600	224	7.4	10.5	79		1	1	.37
1700	229	7.8	11.1	59		1	1	.27
1800	241	8.9	10.0	71		1	1	.30
1900	230	8.7	8.3	79		1	1	.10
2000	227	7.0	8.3	81		1	1	
2100	231	5.6	8.8	77		1	1	
2200	251	6.0	7.7	95		2	3	
2300	264	7.1	5.5	97		1	3	
2400	283	5.9	4.4	93		1	2	
Day	230	5.9			1.38	1	3	183

9 October 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO$_2$(pphm)		Ly/ min
						Avg	Peak	
0100	093	0.6	3.8	97		1	2	
0200	081	0.4	3.3	97		2	2	
0300	104	0.2	2.7	97		2	2	
0400		Calm	2.7	97		2	2	
0500	107	0.4	3.3	97		2	2	
0600		Calm	2.7	97		3	3	
0700	105	0.4	3.8	97		3	4	.07
0800	096	0.4	8.8	85		3	4	.30
0900	163	0.6	13.3	57		3	3	.51
1000	200	2.3	16.1	39		2	3	.68
1100	210	3.3	16.6	33		1	2	.78
1200	226	2.7	18.8	33		1	1	.84
1300	247	2.9	18.8	33		1	1	.83
1400	215	3.6	19.4	32		1	1	.74
1500	218	2.6	20.0	31		-	-	.59
1600	200	2.9	19.4	33		-	-	.38
1700	191	2.5	18.3	39		-	-	.17
1800	176	0.8	13.8	59		-	-	.04
1900	078	1.5	10.5	79		2	3	
2000	084	1.8	9.4	89		2	3	
2100	078	1.3	7.7	96		2	2	
2200	122	2.5	11.1	89		2	2	
2300	145	3.9	12.2	67		2	2	
2400	161	3.1	12.2	67		2	3	
Day	178	1.1				2	4	355

10 October 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO$_2$(pphm)		Ly/ min
						Avg	Peak	
0100	178	2.4	11.1	72		3	3	
0200	156	1.1	8.8	89		6	8	
0300	115	0.2	9.4	87		5	6	
0400	110	1.4	8.8	85		6	6	
0500	114	0.8	8.8	85		5	6	
0600	046	0.3	7.7	90		7	8	
0700	084	1.1	8.8	91		5	8	.07
0800	138	2.8	12.2	69		2	2	.29
0900	152	2.5	15.5	53		2	2	.49
1000	164	3.1	17.7	47		2	3	.66
1100	157	3.3	19.4	45		3	3	.75
1200	174	3.2	21.1	41		2	3	.80
1300	207	5.6	21.6	39		1	1	.82
1400	216	5.2	22.2	40		1	1	.71
1500	208	4.2	22.2	41		-	-	.56
1600	204	3.5	22.2	42		-	-	.37
1700	194	1.8	20.5	47		-	-	.15
1800	145	4.2	17.7	51		-	-	.03
1900	126	3.8	16.6	61		1	1	
2000	129	4.4	15.5	65		1	1	
2100	136	4.7	15.5	71		2	2	
2200	135	5.7	14.9	75		2	2	
2300	146	5.5	14.4	77		1	1	
2400	161	5.0	14.4	79		1	1	
Day	160	2.6				3	8	341

11 October 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO$_2$(pphm)		Ly/ min
						Avg	Peak	
0100	163	3.4	13.8	84		1	2	
0200	160	3.4	13.3	89		2	2	
0300	162	4.0	13.3	89		4	5	
0400	166	3.8	12.7	90		5	6	
0500	149	2.2	12.7	91		3	5	
0600	141	4.9	12.2	91		1	2	
0700	146	4.3	12.7	92		2	4	.07
0800	145	5.0	14.4	83		1	3	.27
0900	144	2.7	16.6	67		2	4	.46
1000	152	3.4	18.8	59		2	3	.57
1100	161	3.3	21.1	54		3	4	.67
1200	183	3.4	22.2	51		2	4	.78
1300	195	4.2	23.8	51		4	5	.76
1400	198	4.5	23.8	51		2	3	.67
1500	232	3.8	23.8	53		-	-	.49
1600	212	2.7	23.3	56		-	-	.26
1700	208	2.5	22.2	63		-	-	.12
1800	205	1.7	21.1	61		2	2	.04
1900	142	3.5	20.0	65		1	2	
2000	150	2.8	18.8	67		1	1	
2100	224	0.8	18.3	79		3	5	
2200		Calm	17.7	85		4	5	
2300	164	0.2	17.2	93		3	4	
2400		Calm	16.6	95		3	4	
Day	168	2.6				2	6	309

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

13 October 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/ min
0100	214	0.5	14.9	97		1	2	
0200		Calm	14.4	97		1	1	
0300		Calm	14.4	97		1	1	
0400	197	0.2	13.3	98		1	2	
0500	071	0.2	13.3	98		2	2	
0600	159	2.1	15.5	98		2	3	
0700	168	1.7	15.5	93		4	5	---
0800	164	2.0	18.8	79		3	4	---
0900	161	3.6	21.1	67		3	3	---
1000	162	4.1	22.7	53		3	3	---
1100	164	3.7	23.3	51		3	4	---
1200	193	3.4	24.4	47		3	5	---
1300	191	4.0	25.5	47		6	9	.71
1400	188	5.3	26.6	47		-	-	.65
1500	193	4.4	26.6	47		-	-	.50
1600	195	4.5	25.5	50		-	-	.36
1700	204	3.3	23.3	59		-	-	.15
1800	188	1.9	22.2	63		2	3	.03
1900	144	4.1	21.6	63		5	9	
2000	160	4.3	21.1	66		4	6	
2100	170	2.9	20.5	69		3	6	
2200	165	3.5	20.0	71		1	1	
2300	177	2.5	18.8	79		1	1	
2400	172	0.4	16.6	93		1	1	
Day	175	2.5				3	9	---

15 October 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/ min
0100	087	0.1	- 1.1	98		1	2	
0200	079	0.3	- 1.1	98		1	2	
0300	077	0.8	- 1.7	98		1	1	
0400	094	0.5	- 2.2	98		1	1	
0500	084	0.5	- 2.2	98		2	4	
0600	085	0.3	- 2.2	98		3	4	
0700	085	1.0	- 0.5	98		3	5	.06
0800	081	1.0	3.3	98		2	3	.20
0900	098	0.8	7.7	65		3	3	.43
1000	077	1.9	8.8	57		3	3	.57
1100	096	2.4	10.5	51		1	2	.75
1200	073	1.8	11.6	47		1	1	.74
1300	075	1.9	13.3	41		1	1	.82
1400	030	2.3	13.3	39		-	-	.69
1500	031	2.0	13.8	38		-	-	.50
1600	027	2.4	13.8	38		-	-	.38
1700	035	1.8	12.7	39		-	-	.15
1800	036	1.7	8.8	53		-	-	.03
1900	091	1.2	7.7	67		2	2	
2000	079	0.6	6.1	75		1	2	
2100	104	1.2	6.6	75		1	2	
2200	066	3.0	6.6	65		1	1	
2300	079	2.7	6.6	67		0	1	
2400	083	2.7	7.2	61		1	1	
Day	067	1.3				2	5	318

17 October 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/ min
0100	270	4.4	8.8	75		3	3	
0200	268	4.5	7.7	83		7	8	
0300	264	3.8	7.7	83		3	6	
0400	270	4.9	7.2	80		2	3	
0500	269	3.9	6.6	82		2	3	
0600	264	4.0	7.7	83	.46	3	5	
0700	262	6.2	5.5	79		2	3	
0800	263	6.9	5.5	77		3	5	.07
0900	245	6.0	6.1	77		2	3	.21
1000	263	7.3	6.1	69		4	5	.12
1100	242	8.9	6.1	57		2	3	.35
1200	252	9.7	6.6	50		2	3	.50
1300	249	10.0	7.2	50		1	1	.31
1400	254	8.3	7.7	50		1	2	.60
1500	250	6.8	6.6	50		2	3	.33
1600	263	6.3	6.6	50		-	-	.11
1700	263	6.1	6.1	51		-	-	.09
1800	264	4.5	5.0	55		-	-	.03
1900	263	4.0	3.3	61		-	-	
2000	269	4.1	3.3	63		2	3	
2100	269	3.2	2.7	69		2	2	
2200	265	3.8	2.2	69		2	3	
2300	229	2.9	1.1	79		2	3	
2400	221	2.9	- 1.1	89		5	8	
Day	257	5.5			.46	3	8	162

18 October 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/ min
0100	213	2.1	- 1.1	97		5	6	
0200	224	2.6	- 1.6	97		6	8	
0300	242	1.1	- 2.2	97		5	7	
0400	216	2.2	- 1.6	97		3	5	
0500	215	2.4	- 1.6	97		5	5	
0600	225	2.5	- 1.1	97		5	5	
0700	216	2.8	- 1.6	97		5	5	.03
0800	214	3.1	2.2	85		5	5	.17
0900	212	3.8	4.4	69		6	7	.39
1000	219	4.6	7.7	57		8	8	.57
1100	222	5.9	8.8	45		7	8	.70
1200	232	6.7	10.5	37		5	6	.75
1300	244	6.8	11.1	35		3	3	.79
1400	249	6.1	11.6	33		3	3	.71
1500	239	6.4	11.6	32		-	-	.57
1600	247	5.5	11.1	32		-	-	.40
1700	239	4.9	10.0	33		-	-	.18
1800	221	2.8	6.6	41		-	-	.02
1900	236	1.4	5.5	57		3	4	
2000	218	1.5	4.4	63		5	6	
2100	218	0.9	3.3	71		5	6	
2200	230	0.3	3.8	73		5	6	
2300	232	0.4	4.4	77		4	5	
2400	224	1.3	5.5	77		4	5	
Day	229	3.2				5	8	317

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

20 October 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm)		Ly/ min
						Avg	Peak	
0100	145	0.5	5.5	93		15	23	
0200	228	1.2	6.1	89		14	25	
0300	212	2.5	7.2	83		7	8	
0400	210	1.8	6.6	85		6	7	
0500	214	3.9	10.0	77		5	6	
0600	216	4.4	10.5	69		4	4	
0700	212	3.5	11.1	75		4	4	
0800	216	3.0	12.2	83		3	3	.03
0900	222	5.4	15.5	79		3	3	.09
1000	228	7.9	17.7	75		2	2	.31
1100	229	7.7	18.8	69		3	3	.48
1200	228	7.7	20.0	69		3	3	.52
1300	234	8.9	21.6	59		3	3	.57
1400	226	8.7	21.6	57		3	5	.62
1500	218	7.9	21.6	59		3	4	.55
1600	232	6.7	21.1	58		-	-	.41
1700	220	6.6	21.1	61		-	-	.23
1800	217	6.3	20.0	65		-	-	.07
1900	267	1.8	18.3	87		3	3	
2000	293	4.1	15.5	100	1.02	2	2	
2100	292	7.0	14.9	100	1.14	2	3	
2200	272	3.8	14.4	100	.18	1	1	
2300	233	4.1	14.4	100		1	2	
2400	264	7.5	13.3	97		1	2	
Day	233	4.7			2.34	4	25	232

21 October 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm)		Ly/ min
						Avg	Peak	
0100	266	6.5	12.2	89		2	3	
0200	269	7.7	11.1	75		1	2	
0300	271	6.6	10.0	87		2	2	
0400	271	7.9	9.4	89		3	5	
0500	264	7.3	8.8	89		4	5	
0600	261	7.6	8.3	91		3	5	
0700	253	7.6	7.7	92		4	5	
0800	242	5.3	8.3	93		2	3	.03
0900	248	6.9	8.8	89		2	2	.13
1000	247	8.6	10.5	69		2	2	.21
1100	256	8.5	10.5	57		3	5	.49
1200	261	7.7	10.0	57		2	4	.53
1300	259	6.8	10.0	59		3	5	.59
1400	274	7.1	10.0	59		3	8	.17
1500	275	7.1	10.5	53		-	-	.35
1600	264	6.5	10.5	51		-	-	.40
1700	263	5.3	8.8	53		-	-	.38
1800	266	2.7	6.6	61		-	-	.07
1900	278	1.2	5.5	77		1	2	
2000	199	0.3	5.5	85		2	2	
2100		Calm	4.4	97		2	2	
2200	128	0.2	4.4	85		2	2	
2300	130	1.3	5.5	75		2	3	
2400	211	1.2	6.1	81		5	7	
Day	260	5.1				3	8	201

23 October 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm)		Ly/ min
						Avg	Peak	
0100	269	4.0	- 1.1	93		1	1	
0200	294	1.6	- 1.1	98		1	1	
0300	253	3.0	- 1.1	98		1	1	
0400	268	5.2	- 1.6	98		1	1	
0500	269	3.4	- 3.3	98		1	1	
0600	272	1.9	- 2.7	98		1	1	
0700	274	2.3	- 2.7	98		1	1	
0800	272	1.3	- 1.1	97		1	2	.04
0900	282	2.1	1.1	85		3	3	.24
1000	335	3.4	1.1	61		1	2	.45
1100	332	3.8	2.2	53		0	0	.47
1200	315	4.4	1.1	51		0	0	.63
1300	312	4.7	1.6	50		0	0	.54
1400	315	5.1	2.2	48		0	1	.51
1500	308	4.6	2.2	43		1	1	.50
1600	337	5.1	1.1	42		0	0	.49
1700	322	2.9	0.5	45		0	0	.34
1800	319	1.4	- 1.1	53		0	1	.12
1900	317	0.6	- 2.2	73		1	1	.02
2000	333	0.7	- 3.3	77		1	1	
2100	339	0.3	- 5.0	91		1	1	
2200	030	0.3	- 6.1	97		1	1	
2300	060	0.1	- 6.6	97		1	2	
2400		Calm	- 7.2	97		1	1	
Day	301	2.3				1	3	260

24 October 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm)		Ly/ min
						Avg	Peak	
0100		Calm	- 7.7	97		1	2	
0200		Calm	- 7.2	97		1	2	
0300		Calm	- 7.2	97		2	4	
0400	063	0.3	- 7.7	97		1	2	
0500	083	0.7	- 7.7	98		2	3	
0600	083	0.8	- 7.7	98		3	6	
0700	083	0.6	- 6.6	98		3	4	
0800	068	0.6	- 3.3	98		4	6	.06
0900	098	1.0	1.1	69		3	4	.26
1000	128	1.9	3.3	48		2	2	.41
1100	157	2.7	5.5	37		1	2	.61
1200	210	1.3	6.6	31		7	9	.72
1300	218	2.7	8.3	27		9	12	.73
1400	218	2.9	8.8	25		1	3	.69
1500	224	2.6	8.8	25		2	5	.66
1600	222	2.1	8.8	25		10	14	.50
1700	223	2.7	6.6	29		6	12	.24
1800	207	0.4	2.7	41		1	1	.10
1900	082	1.0	1.1	55		3	6	
2000	087	1.3	0.5	67		5	5	
2100	075	0.9	- 0.5	81		4	5	
2200	076	1.3	- 0.5	81		4	4	
2300	081	1.1	- 0.5	87		3	4	
2400	076	1.3	0.0	93		5	6	
Day	162	0.5				4	14	298

Table 2 (continued). SURFACE WEATHER AND SO$_2$ OBSERVATIONS AT JIMMY STEWART AIRPORT

28 October 1969

Time	Dir	Speed	Temp	RH	P	SO$_2$(pphm)		Ly/
EST	(°)	(mps)	(°C)	(%)	(cm)	Avg	Peak	min
0100	207	0.6	1.1	100		2	2	
0200	236	1.4	1.1	100		2	3	
0300	249	1.5	0.0	100		2	2	
0400		Calm	- 1.1	100		3	3	
0500		Calm	- 1.6	100		3	5	
0600	253	0.8	- 1.1	100		6	10	
0700	214	0.9	0.0	100		6	8	
0800	226	1.3	0.0	100		5	5	.03
0900	234	2.1	1.6	100		5	5	.10
1000	250	2.1	4.4	79		6	6	.13
1100	302	3.1	6.6	65		4	6	.38
1200	315	4.2	6.6	59		2	3	.58
1300	334	4.9	6.6	55		1	3	.59
1400	335	3.4	6.1	55		0	1	.50
1500	348	2.9	5.5	56		1	-	.40
1600	318	2.0	6.6	54		1	-	.09
1700	354	3.3	5.0	59		0	-	.19
1800	025	1.6	2.2	77		0	-	.05
1900	010	1.1	0.0	93		1	-	
2000	018	1.2	- 1.1	97		1	1	
2100	085	1.1	- 2.2	97		1	1	
2200	092	0.9	- 3.3	97		1	2	
2300	092	0.9	- 3.3	97		2	2	
2400	151	0.7	- 3.8	97		2	2	
Day	317	0.9				2	10	183

29 October 1969

Time	Dir	Speed	Temp	RH	P	SO$_2$(pphm)		Ly/
EST	(°)	(mps)	(°C)	(%)	(cm)	Avg	Peak	min
0100	084	1.2	- 3.3	98		2	2	
0200	097	1.6	- 3.3	98		2	2	
0300	045	0.1	- 4.4	98		2	2	
0400	017	0.7	- 5.5	98		2	2	
0500		Calm	- 5.5	98		2	2	
0600	053	0.2	- 6.1	98		2	3	
0700	051	1.6	- 5.5	98		2	3	
0800	074	2.4	- 2.2	98		2	3	
0900	079	2.8	0.5	92		2	2	.24
1000	073	3.0	2.7	75		2	2	.39
1100	063	2.3	5.0	59		1	1	.58
1200	062	3.1	6.6	45		1	1	.65
1300	061	2.7	8.3	37		1	1	.66
1400	057	3.0	8.8	33		0	0	.70
1500	073	3.0	9.4	27		-	-	.67
1600	073	2.9	8.8	28		-	-	.38
1700	072	2.6	7.7	30		-	-	.14
1800	071	1.7	3.3	43		-	-	
1900	075	1.6	2.7	47		2	3	
2000	083	2.0	2.2	51		1	2	
2100	073	1.8	0.5	59		1	2	
2200	066	1.3	- 0.5	67		1	1	
2300	057	0.8	0.0	67		1	2	
2400	094	1.0	- 0.5	67		1	2	
Day	069	1.8				2	3	265

30 October 1969

Time	Dir	Speed	Temp	RH	P	SO$_2$(pphm)		Ly/
EST	(°)	(mps)	(°C)	(%)	(cm)	Avg	Peak	min
0100	043	0.3	- 1.6	75		1	1	
0200	073	0.5	- 3.3	89		1	1	
0300	080	0.6	- 3.3	93		2	2	
0400	103	0.5	- 3.3	95		2	2	
0500	070	0.9	- 4.4	95		2	2	
0600	102	1.5	- 4.4	97		2	2	
0700	094	1.1	- 3.8	97		2	2	
0800	100	0.8	0.0	87		3	3	
0900	064	1.4	- 3.3	61		2	2	.09
1000	058	3.3	- 6.6	50		2	2	.45
1100	093	2.4	10.0	31		2	2	.57
1200	131	3.1	12.2	25		2	3	.68
1300	119	4.0	13.3	22		3	4	.73
1400	135	4.0	13.3	20		1	2	.71
1500	122	3.7	12.7	20		1	1	.64
1600	118	3.6	12.2	21		1	1	.49
1700	109	2.6	10.0	23		1	1	.29
1800	111	3.0	7.2	27		1	1	.06
1900	096	1.2	5.0	37		1	1	
2000	088	1.5	5.5	39		1	1	
2100	071	0.9	3.3	45		1	2	
2200	048	0.4	3.3	55		2	2	
2300	133	0.9	4.4	57		3	4	
2400	149	2.5	5.5	50		5	6	
Day	107	1.7				2	6	282

31 October 1969

Time	Dir	Speed	Temp	RH	P	SO$_2$(pphm)		Ly/
EST	(°)	(mps)	(°C)	(%)	(cm)	Avg	Peak	min
0100	134	5.3	5.5	50		5	6	
0200	135	3.5	5.0	53		4	5	
0300	123	3.7	5.5	54		3	4	
0400	140	5.5	5.5	54		3	3	
0500	141	5.3	5.5	57		3	3	
0600	149	5.0	5.5	63		3	3	
0700	150	6.1	5.5	64		3	3	
0800	142	6.1	6.6	63		3	3	.04
0900	144	5.3	8.8	59		3	3	.16
1000	147	6.4	10.5	56		3	3	.34
1100	144	6.2	12.7	53		2	2	.53
1200	152	6.1	13.3	50		2	2	.60
1300	143	5.5	13.3	50		2	2	.67
1400	136	5.5	13.3	53		1	1	.66
1500	137	5.5	13.3	53		-	-	.58
1600	128	4.9	12.7	53		-	-	.45
1700	120	4.5	11.1	60		-	-	.23
1800	122	5.0	10.5	67		-	-	.04
1900	114	4.1	10.0	73		1	1	
2000	123	3.5	10.0	77		2	2	
2100	136	5.5	10.0	81		2	2	
2200	149	3.5	10.5	81		2	2	
2300	163	4.2	10.5	81		2	3	
2400	142	3.0	11.1	83		2	2	
Day	138	4.9				3	6	257

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

1 November 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm)		Ly/ min
						Avg	Peak	
0100	156	4.9	11.1	85		1	1	
0200	144	5.2	11.1	87		1	1	
0300	146	5.0	11.1	91		1	1	
0400	143	5.0	11.1	92		1	1	
0500	144	4.1	11.1	94		1	1	
0600	143	4.5	11.1	95		1	1	
0700	135	3.9	11.1	95		1	1	
0800	152	5.0	11.1	97	.03	1	1	
0900	125	3.9	11.1	93	.03	1	1	.04
1000	132	4.6	11.1	91	.03	0	0	.05
1100	135	5.0	12.2	87	.03	0	0	.07
1200	136	5.9	12.2	86	.03	0	0	.15
1300	130	4.2	12.2	83		0	0	.16
1400	129	4.4	12.2	81		0	0	.08
1500	136	3.8	12.7	75		0	0	.07
1600	128	3.4	13.3	75		0	0	.04
1700	134	4.1	12.7	77		0	0	
1800	135	4.9	12.7	79		0	0	
1900	128	4.3	12.2	89		1	1	
2000	123	6.3	12.2	89		1	1	
2100	127	6.8	12.2	93		1	1	
2200	122	7.8	12.2	97		1	1	
2300	117	7.2	11.6	97	.05	1	1	
2400	109	5.6	11.1	97	.15	0	1	
Day	132	4.9			.35	1	1	40

2 November 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm)		Ly/ min
						Avg	Peak	
0100	112	4.9	11.1	97	.18	0	0	
0200	087	3.0	11.1	97	.13	0	0	
0300	075	2.1	11.1	97	.25	0	0	
0400	045	1.3	11.1	97	.33	0	0	
0500	073	2.9	10.5	97	.15	0	0	
0600	074	2.0	11.1	97	.25	0	0	
0700	053	2.0	11.1	97	.03	0	0	
0800	031	1.5	11.1	97	.25	0	0	
0900	044	1.2	11.1	97	.23	0	0	
1000	034	1.3	12.2	97	.20	0	0	
1100	052	0.9	12.7	97	.08	0	0	.03
1200	044	1.0	13.3	97	.05	0	0	.03
1300	085	0.7	13.8	97		0	0	.03
1400	158	0.3	14.4	97		1	1	.08
1500	194	0.6	13.8	97		1	1	
1600	254	0.6	13.8	97		1	1	
1700	021	0.6	13.3	97	.03	0	1	
1800	216	0.9	13.3	97	.03	0	0	
1900	236	0.8	13.3	97	.03	1	1	
2000	264	2.8	11.6	98		2	2	
2100	278	3.0	10.5	98	.10	2	2	
2200	262	3.8	10.0	98	.08	2	2	
2300	259	2.4	10.0	98		2	2	
2400	259	3.1	8.8	98		2	2	
Day	051	0.2			2.40	1	2	10

6 November 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm)		Ly/ min
						Avg	Peak	
0100	269	7.8	3.3	81		1	1	
0200	282	7.6	3.8	81		1	1	
0300	277	7.4	3.8	85		0	1	
0400	268	7.2	3.8	87		1	2	
0500	269	7.1	4.4	87		1	1	
0600	288	7.7	4.4	79		1	1	
0700	298	7.1	4.4	69		0	0	
0800	296	7.2	4.4	75		0	1	
0900	295	7.5	4.4	67		1	2	.07
1000	293	6.9	5.0	63		2	2	.12
1100	327	6.6	5.0	63		2	3	.24
1200	341	5.0	4.4	66		0	0	.15
1300	345	5.4	4.4	71		0	0	.10
1400	298	5.7	4.4	73		0	0	.12
1500	297	5.4	3.8	76		3	6	.12
1600	325	4.2	3.8	85		-	-	.06
1700	333	3.4	3.3	93		-	-	.03
1800	308	1.7	3.3	97		-	-	
1900	287	2.3	3.3	98		-	-	
2000	288	2.0	3.3	98		1	1	
2100	297	1.7	3.3	97		2	3	
2200	289	2.0	3.3	97		2	3	
2300	295	2.0	3.3	97		1	1	
2400	356	1.8	3.3	96		1	1	
Day	296	4.7				1	6	61

28 November 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm)		Ly/ min
						Avg	Peak	
0100	069	1.3	- 2.7	97		4	5	
0200	062	0.9	- 2.7	97		4	4	
0300	071	0.6	- 2.2	98		3	4	
0400	070	0.3	- 2.2	98		3	4	
0500	030	0.7	- 1.6	98		5	6	
0600		Calm	- 2.2	98		5	5	
0700	085	1.0	- 3.3	98		5	6	
0800	081	1.3	- 2.7	98		5	6	
0900	072	1.0	- 1.1	98		5	5	---
1000		Calm	2.7	79		5	7	---
1100	082	0.4	4.4	65		7	7	---
1200	230	0.7	5.0	63		8	9	---
1300	233	2.9	5.0	69		10	11	---
1400	251	3.5	3.8	75		10	11	---
1500	264	3.5	3.3	79		10	11	---
1600	263	2.5	2.7	89		9	11	---
1700	281	2.6	1.6	97		8	8	---
1800	236	2.6	- 0.5	97		7	7	
1900	204	3.4	- 1.1	98		6	6	
2000	206	3.2	- 1.1	98		6	7	
2100	207	2.7	- 1.1	98		9	10	
2200	207	3.9	- 1.1	98		10	12	
2300	216	3.4	- 1.1	98		13	13	
2400	213	2.8	- 1.1	97		12	12	
Day	224	1.1				7	13	---

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

30 November 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/min
0100	228	4.4	-2.2	97		8	8	
0200	231	4.8	-2.2	97		9	10	
0300	234	4.3	-2.2	97		10	10	
0400	234	4.7	-2.2	97		7	9	
0500	240	4.9	-2.2	97		5	6	
0600	246	5.4	-2.2	95		4	5	
0700	241	5.3	-2.2	93		3	4	
0800	244	7.5	-2.2	88		3	3	
0900	250	7.6	-2.2	83		2	3	.03
1000	243	7.5	-1.6	73		2	2	.14
1100	231	8.6	-1.6	77		2	2	.22
1200	228	8.2	-1.1	69		3	4	.26
1300	229	8.0	-2.2	97	.05	4	5	.37
1400	232	8.0	-2.2	97	.03	3	5	.15
1500	232	7.9	-3.8	97	.03	2	2	.08
1600	232	6.4	-2.2	97	.03	2	2	.04
1700	225	7.1	-2.2	97		2	3	.02
1800	223	7.2	-1.6	97		3	3	
1900	220	7.4	-1.6	95		2	3	
2000	223	7.0	-1.6	93		2	2	
2100	223	6.5	-1.1	85		2	2	
2200	219	6.3	-0.5	77		3	3	
2300	226	6.5	-0.5	78		4	5	
2400	229	6.8	-0.5	85		5	5	
Day	229	6.5			.14	4	10	63

2 December 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/min
0100	298	4.4	-6.6	97		1	1	
0200	292	3.9	-7.7	91		1	2	
0300	271	2.5	-9.8	93		1	2	
0400	229	0.7	-11.6	98		1	1	
0500	268	1.0	-10.0	98		2	2	
0600	263	2.2	-11.1	96		3	3	
0700	257	1.0	-12.2	98		1	2	
0800	232	0.5	-10.0	98		3	6	.07
0900	206	1.5	-6.6	98		3	3	.17
1000	214	3.1	-5.0	88		5	6	.29
1100	217	4.2	-3.3	77		6	8	.40
1200	226	7.2	-2.7	67		8	10	.41
1300	217	7.2	-2.2	58		6	8	.57
1400	211	8.4	-2.2	58		5	5	.80
1500	199	7.2	-1.6	58		3	5	.32
1600	215	7.4	-1.1	58		2	2	.22
1700	220	5.9	-1.1	58		2	2	.06
1800	224	6.3	-0.5	58		1	2	
1900	222	7.1	-0.5	58		3	3	
2000	229	6.6	0.0	61		6	8	
2100	230	6.1	0.0	63		3	6	
2200	222	5.8	0.0	66		6	6	
2300	231	5.7	0.0	69		5	6	
2400	229	5.5	0.5	73		7	8	
Day	227	4.1				5	10	173

3 December 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/min
0100	300	4.1	-5.0	86		1	1	
0200	282	4.7	-5.0	83		2	2	
0300	275	4.3	-5.0	83		0	0	
0400	277	5.4	-5.5	85		0	1	
0500	276	3.6	-6.6	89		1	1	
0600	290	1.7	-7.7	91		1	1	
0700	278	3.4	-5.5	85		1	2	
0800	306	2.0	-4.4	85		2	2	.02
0900	294	1.8	-3.8	83		6	6	.10
1000	282	2.9	-2.7	77		3	5	.20
1100	293	3.4	-1.1	75		4	5	.26
1200	284	3.6	-2.2	75		4	5	.51
1300	275	4.5	-1.6	79		2	3	.26
1400	297	4.0	-1.1	71		1	1	.33
1500	297	4.6	-1.6	67		2	5	.35
1600	299	3.2	-2.2	69		1	1	.12
1700	298	2.6	-2.2	71		2	3	.04
1800	260	0.7	-2.7	61		3	3	
1900	280	2.1	-2.2	81		2	2	
2000	290	1.8	-2.7	75		3	3	
2100	309	0.7	-3.3	76		2	3	
2200	289	0.8	-3.3	83		2	3	
2300	299	1.6	-2.7	79		2	3	
2400	349	1.6	-3.8	79		1	1	
Day	288	2.8				2	6	137

4 December 1969

Time EST	Dir (°)	Speed (mps)	Temp (°C)	RH (%)	P (cm)	SO_2(pphm) Avg	Peak	Ly/min
0100	336	0.7	-4.4	83		1	1	
0200	327	0.4	-4.4	85		1	1	
0300	008	0.2	-7.2	95		1	2	
0400		Calm	-7.7	97		1	3	
0500	125	0.3	-8.8	97		1	1	
0600	063	0.3	-9.4	97		1	1	
0700	074	1.0	-11.1	97		2	2	
0800	076	0.9	-10.0	97		2	3	.06
0900	076	1.1	-6.6	97		2	3	.29
1000	080	1.3	-3.3	81		3	5	.40
1100	078	1.8	-1.1	66		2	2	.53
1200	057	0.9	-0.5	57		1	2	.66
1300	053	2.5	0.0	47		1	1	.54
1400	050	3.0	1.6	38		1	2	.53
1500	052	2.9	0.5	34		1	2	.43
1600	347	2.1	0.0	36		2	2	.35
1700	056	2.1	-1.1	41		2	2	.06
1800	056	3.2	-1.1	41		2	2	
1900	057	3.4	-1.6	46		1	1	
2000	072	3.3	-1.6	50		2	2	
2100	066	4.2	-1.6	48		2	2	
2200	068	4.1	-2.2	50		2	2	
2300	063	3.4	-1.1	50		2	2	
2400	085	3.6	-0.5	43		1	2	
Day	084	1.8				2	5	204

PLUME CROSS SECTIONS

Cross sections of the Keystone and Homer City plumes obtained by the LAPPES helicopter are presented in Table 3. The orientation is such that the reader is looking downwind with the plume top to his right. The height of each traverse above stack base elevation is indicated over the particular column of data with increasing altitude from left to right. The relative order in which the traverses were flown is shown at the base of each column.

The plume can be physically located by means of radial directions listed in the second column for each data point. These were determined by computing clockwise and/or counterclockwise from the given reference point in increments based on the arc distance of the particular cross section. Because of missing coordinates, the reference points for cross sections 1, 2, 3, 4, 5, 14, 19, and 32 were arbitrarily set at 360° and are not referenced to the Keystone stacks; actual plume location may be derived from related measurements.

The first column of each cross section lists the cumulative distance across the plume beginning with zero at the left edge looking downwind. The corresponding SO_2 concentrations in pphm are instantaneous readings taken at 6-second intervals; this corresponds to a crosswind distance increment of 107.3 meters for the October 1967 series (40 mph) and 134.1 meters during the April 1969 and October 1969 series (50 mph). The peak concentration in each traverse is shown at the bottom with the data point nearest the peak's location indicated by an asterisk in the column above. All instantaneous and peak SO_2 concentrations are net values; i.e., the ambient SO_2 and CO_2 backgrounds have been subtracted.

When the data are presented in this manner, the horizontal distance across the plume is scaled correctly whereas the vertical is not. To achieve a true physical reproduction of the plume, the distance between the columns would have to be scaled according to the respective traverse heights. Although completely zero traverses are shown as terminating at the plume edge, these flights were normally extended well beyond to confirm the absence of SO_2. Finally, crosswind and vertical integrated concentrations are listed at the bottom and side of each cross section.

Crosswind integrated concentrations (CIC) in grams per square meter for each plume traverse were calculated as follows:

$$CIC_j = 2.67 \times 10^{-6} \times \sum_i \chi_{ij}\, \Delta y_i$$

where 2.67×10^{-6} = conversion factor from ppb to g/m^3 based on a mean temperature aloft of 4°C and a mean altitude of 425 meters MSL.

χ_{ij} = SO_2 concentration in ppb of the i-th data point in the j-th traverse.

dy_i = cross-plume interval at which readings were made (107.3 meters for the October 1967 series; 134.1 meters during the April 1969 and October 1969 series).

Vertical integrated concentrations (VIC) in grams per square meter for each data point were obtained from the properly aligned traverses by means of this equation:

$$VIC_i = 2.67 \times 10^{-6} \times \sum_j X_{ij}\, dz_j$$

where 2.67×10^{-6} = conversion factor defined above.

X_{ij} = SO_2 concentration in ppb of the i-th data point in the j-th traverse

dz_j = one-half the difference between the next higher and the next lower pass for interior traverses. For the highest (lowest) traverse, dz_j is the height difference between that traverse and the next lower (higher).

The crosswind and vertical integrated concentrations were computed on the basis of ppb SO_2 during cross section reduction and may differ slightly from the results obtained by using SO_2 values rounded to pphm, as presented in Table 3.

Table 3. PLUME CROSS SECTIONS

Symbols

Ref Pt : Direction from Keystone or Homer City stacks in whole degrees of azimuth of cross section reference point.

Cum y : Cumulative distance across plume to nearest whole meter.

Dir (°) : Direction from Keystone or Homer City stacks to nearest tenth degree of each data point.

VIC : Vertical integrated concentration in grams per square meter $\times 10^{-3}$.

CIC : Crosswind integrated concentration in grams per square meter $\times 10^{-3}$.

Peak : Peak SO_2 concentration per traverse in whole parts per hundred million.

Pass : Numerical order in which traverses were flown.

* : Designation of data point nearest peak concentration location in each traverse.

- : Missing data.

Table 3. PLUME CROSS SECTIONS

[illegible]

[illegible]

[illegible]

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #3 Arc 4.8 km
20 October 1967 Ref Pt 360° (Arbitrary)
0710-0733 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)									VIC
		200	242	290	332	427	457	552	592	662	
0	342.1		0								0
107	343.4		11								15
215	344.6		11								15
322	345.9	0	12								15
429	347.2	12	11								27
536	348.5	13	11								28
644	349.8	11	10								27
751	351.0	10	12								25
858	352.3	11	12								29
966	353.6	11	•15								31
1073	354.9	12	12			0					27
1180	356.2	11	11			5		0			34
1287	357.4	11	10			6		2			38
1395	358.7	11	11	0		44		7			113
1502	360.0	•15	11	3		35		46		0	173
1609	001.3	12	11	7	0	•4		•153		0	119
1717	002.6	13	12	12	3	0	0	75		0	184
1824	003.9	11	11	•7	5		•2	5		0	57
1931	005.1	12	10	13	•22		90	0	0	0	232
2039	006.4	13	11	10	6		58		•7	0	159
2146	007.7	0	11	11	11		32		74	0	176
2253	009.0		11	11	9		4		5	0	59
2360	010.2		10	11	8		0		1	0	42
2468	011.5		14	11	8				0	0	44
2575	012.8		13	11	5					0	39
2682	014.1		12	11	6						39
2790	015.4		11	10	5						35
2897	016.6		11	9	6						35
3004	017.9		10	7	3						26
3111	019.2		9	7	1						23
3219	020.5		0	5	1						13
3326	021.8			11	0						13
3433	023.1			10							12
3541	024.3			13							16
3648	025.6			11							13
3755	026.9			8							9
3862	028.2			7							8
3970	029.5			4							4
4027	030.7			2							3
4184	032.0			3							3
4292	033.3			0							0
CIC		543	963	652	291	265	474	928	251	0	
Peak		15	15	14	30	109	112	153	92	0	
Pass		9	8	7	6	5	4	3	2	1	

Keystone #5 Arc 16.0 km
20 October 1967 Ref Pt 360° (Arbitrary)
0759-0816 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)						VIC
		422	487	537	610	642	710	
0	350.8		0					0
107	351.2		3					6
215	351.5		0					13
322	351.9		0					13
429	352.3		1					5
536	352.7		4					6
644	353.1		12					18
751	353.5		13					20
858	353.9		23					36
966	354.2		23					35
1073	354.6		24		0			37
1180	355.0	0	•31	0	2			51
1287	355.4	1	31	4	26			94
1395	355.8	3	20	6	24			80
1502	356.2	4	21	4	•42			105
1609	356.5	6	21	3	8			58
1717	356.9	•8	27	6	31			108
1824	357.3	1	13	26	3			72
1931	357.7	0	10	39	0			80
2039	358.1		13	•52				105
2146	358.5		19	15		0	0	64
2253	358.8		11	6		•28	4	72
2360	359.2		8	5		17	26	91
2468	359.6		2	3		37	•82	206
2575	360.0		10	4		8	23	71
2682	000.4		17	7		2	0	41
2790	000.8		6	13		0		31
2897	001.2		11	17				44
3004	001.5		9	24				54
3111	001.9		0	22				45
3219	002.3			31				35
3326	002.7			19				31
3433	003.1			8				14
3541	003.5			7				11
3648	003.8			14				23
3756	004.2			13				21
3862	004.6			12				20
3970	005.0			9				15
4077	005.4			8				13
4184	005.8			9				15
4292	006.1			11				19
4399	006.5			5				9
4506	006.9			4				6
4613	007.3			0				0
CIC		75	1151	1151	390	261	359	
Peak		14	33	55	46	39	82	
Pass		6	5	4	3	2	1	

Keystone #4 Arc 10.0 km
20 October 1967 Ref Pt 360° (Arbitrary)
0738-0755 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)								VIC
		292	362	422	467	542	592	622	712	
0	352.6	0			0					0
107	353.2	1	0	0	4		0			9
215	353.9	1	0	3	6		1			20
322	354.5	1	0	15	29		5			76
429	355.1	0	0	•27	•47		•35			151
536	355.7	1	0	10	0		94			116
644	356.3	3	0	4		0	48		0	61
751	356.9	0	0	5		31	12		0	73
858	357.5	2	0	5		•27	0		0	57
966	358.2	0	0	0		134		0	0	226
1073	358.8	4	0			65		•98	0	285
1180	359.4	•7	0			30		66	0	178
1287	360.0	4				5		7	0	28
1395	000.6	2				1		2	0	8
1502	001.2	0				0		0		0
CIC		82	0	201	244	841	113	495	0	
Peak		8	0	31	71	146	97	105	0	
Pass		8	7	6	5	4	3	1	2	

Keystone #6 Arc 4.8 km
21 October 1967 Ref Pt 070°
0715-0727 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)						VIC
		240	295	370	418	478	540	
0	062.3	0						0
107	063.6	1		0				1
215	064.9	2		3				7
322	066.2	2		3		0		9
429	067.4	3		18		1		37
536	068.7	•6		16		24		74
644	070.0	0		2	0	32		57
751	071.3			8	2	31		66
858	072.6		0	19	2	32		86
966	073.8		5	•15	13	•35	0	108
1073	075.1		1	1	14	11	5	49
1180	076.4		•19	0	32	10	27	141
1287	077.7		4		38	0	30	113
1395	079.0		1		•27		•67	152
1502	080.2		0		37		8	67
1609	081.5				4		0	7
1717	082.8				0			0
CIC		41	86	244	486	502	396	
Peak		7	20	31	53	41	68	
Pass		6	5	4	3	1	2	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #7 Arc 10.0 km
21 October 1967 Ref Pt 083°
0735-0749 EST SO₂ in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 298	374	416	470	550	VIC
0	072.5		0				0
107	073.1		1		0		5
215	073.7		3		2		17
322	074.4	0	4		4		21
429	075.0	2	4		•12		42
536	075.6	3	7	0	12		38
644	076.2	3	9	5	10		46
751	076.9	7	11	13	2		51
858	077.5	•11	9	10	3		55
966	078.1	8	11	12	0		50
1073	078.7	5	13	12	6		56
1180	079.3	4	•9	13	12		60
1287	079.9	3	13	13	8		60
1395	080.5	0	13	13	8	0	51
1502	081.2		12	12	5	1	47
1609	081.8		15	12	5	7	50
1717	082.4		2	16	6	0	39
1824	083.0		1	•22	6	0	41
1931	083.6		0	17	6	•12	57
2039	084.2			10	9	5	40
2146	084.8			3	6	2	20
2253	085.5			3	4	0	11
2360	086.1			0	4		7
2468	086.7				1		2
2575	087.3				1		2
2682	087.9				0		0
CIC		134	417	536	387	77	
Peak		11	15	26	14	12	
Pass		5	4	3	2	1	

Keystone #10 Arc 10.0 km
23 October 1967 Ref Pt 034°
0742-0757 EST SO₂ in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 307	362	422	477	VIC
0	018.0	0				0
107	018.6	23				43
215	019.2	•28				41
322	019.9	6				9
429	020.5	4				5
536	021.1	0				0
644	021.7		0			0
751	022.3		6			9
858	022.9		9			14
966	023.5		21			32
1073	024.2		23			[illegible]
1180	024.8		26			[illegible]
1287	025.4		36			[illegible]
1395	026.0		45			[illegible]
1502	026.6		45			[illegible]
1609	027.2		48			74
1717	027.9		49			76
1824	028.5		54			83
1931	029.1		61			94
2039	029.7		•84			130
2146	030.3		82	0		126
2253	030.9		23	6		45
2360	031.5		9	13		34
2468	032.2		26	34		92
2575	032.8		39	43		126
2682	033.4		0	46		70
2790	034.0			66		101
2897	034.6			55		85
3004	035.2			46		70
3111	035.8			111		171
3219	036.5			139		214
3326	037.1			91		140
3433	037.7			62		95
3541	038.3			32		49
3648	038.9			37		58
3755	039.5			91		140
3862	040.1			•193	0	297
3970	040.8			4	2	9
4077	041.4			0	•68	100
4184	042.0				6	9
4292	042.6				2	3
4399	043.2				0	0
CIC		191	1977	3065	224	
Peak		36	88	206	103	
Pass		1	1	1	2	

Keystone #8 Arc 16.0 km
21 October 1967 Ref Pt 089°
0808-0824 EST SO₂ in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 488	540	610	670	730	VIC
0	078.2		0				0
107	078.6		1				2
215	079.0		0				0
322	079.4		1				2
429	079.8		2				3
536	080.2		3				5
644	080.5		4				7
751	080.9		2				3
858	081.3		1				1
966	081.7		1				2
1073	082.1		1				2
1180	082.5		3				5
1287	082.9		2				4
1395	083.2		5				8
1502	083.6	0	•3				5
1609	084.0	1	3				7
1717	084.4	0	2				4
1824	084.8	2	1				5
1931	085.2	1	0				1
2039	085.5	1	1	0			3
2146	085.9	1	3	2			11
2253	086.3	1	4	3		0	13
2360	086.7	1	4	1		0	9
2468	087.1	1	2	4	0	0	12
2575	087.5	2	0	5	1	0	13
2682	087.8	1	0	5	3	0	16
2790	088.2	3	1	4	•4	0	21
2897	088.6	•3	2	•4	0	0	16
3004	089.0	3	0	1		0	7
3111	089.4	1		0		0	2
3219	089.8	0				0	0
3326	090.2	1				0	1
3433	090.5	2					2
3541	090.9	2					3
3648	091.3	0					0
CIC		81	160	87	22	0	
Peak		4	6	6	6	0	
Pass		2	1	3	4	5	

Keystone #9 Arc 4.8 km
23 October 1967 Ref Pt 013°
0713-0731 EST SO₂ in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 310	337	365	432	495	530	VIC
0	001.5		0					0
107	002.8	0	7					5
215	004.0	20	23					32
322	005.3	26	46					52
429	006.6	21	50					52
536	007.9	25	73	0				71
644	009.2	57	88	2				109
751	010.4	•45	•98	7				113
858	011.7	25	45	23				80
966	013.0	20	26	34				76
1073	014.3	5	4	120				158
1180	015.6	2	0	•110				141
1287	016.8	0		115				146
1395	018.1			107				135
1502	019.4			42				54
1609	020.7			0				0
1717	022.0							0
1824	023.2							0
1931	024.5				0			0
2039	025.8				2			4
2146	027.1				16			28
2253	028.4				93			161
2360	029.6				213			370
2468	030.9				226		0	393
2575	032.2				•294		0	511
2682	033.5				157	0	0	273
2790	034.8				151	7	0	272
2897	036.1				18	7	0	40
3004	037.3				0	•32	0	41
3111	038.6					22	0	29
3219	039.9					1	0	2
3326	041.2					0	0	0
CIC		701	1316	1604	3354	198	0	
Peak		66	98	123	295	63	0	
Pass		6	5	1	2	3	4	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #11
23 October 1967
0853-0905 EST

Arc 16.0 km
Ref Pt 052°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse height (m) 387	447	502	562	VIC
0	045.1	0				0
107	045.5	8				13
215	045.9	8				13
322	046.2	8				13
429	046.6	2				4
536	047.0	7				11
644	047.4	7				11
751	047.8	0				0
858	048.2	5		0		8
966	048.5	5	0	1		9
1073	048.9	*9	8	24	0	64
1180	049.3	0	53	*276	20	538
1287	049.7		*133	31	27	295
1395	050.1		218	275	19	788
1502	050.5		204	25	20	384
1609	050.8		138	8	25	264
1717	051.2		138	99	13	385
1824	051.6		70	42	13	193
1931	052.0		170	0	14	284
2039	052.4		167	0	18	277
2146	052.8		164	2	18	284
2253	053.2		159	9	*31	308
2360	053.5		170	0	17	287
2468	053.9		70	11	12	142
2575	054.3		106	0	2	167
2682	054.7		139	0	0	214
2790	055.1		195	0		299
2897	055.5		218	34		380
3004	055.8		132	0		203
3111	056.2		72			111
3219	056.6		7			11
3326	057.0		0			0
CIC		172	7816	1401	710	
Peak		13	227	279	33	
Pass		4	3	1	2	

Keystone #13
24 October 1967
0734-0747 EST

Arc 10.0 km
Ref Pt 021°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 332	382	437	510	567	627	VIC
0	008.7		0					0
107	009.3		6					8
215	009.9	0	13					18
322	010.5	0	35					49
429	011.2	0	46					64
536	011.8	0	63					89
644	012.4	0	*75	0				105
751	013.0	0	40	11				74
858	013.6	0	48	21				103
966	014.2	0	29	47				121
1073	014.9	0	43	54				153
1180	015.5	0	15	59				122
1287	016.1	0	7	70				130
1395	016.7	0	0	64				110
1502	017.3	0		50				96
1609	017.9			49				84
1717	018.5			76				135
1824	019.2			98				169
1931	019.8			*108				184
2039	020.4			71	0			122
2146	021.0			14	6			34
2253	021.6			50	4			92
2360	022.2			7	13	0		34
2468	022.8			0	15	7	0	37
2575	023.5				22	18	0	66
2682	024.1				19	*37	0	51
2790	024.7				25	35	0	98
2897	025.3				35	23	0	97
3004	025.9				26	27	0	91
3111	026.5				37	16	0	91
3219	027.1				49	14	0	107
3326	027.8				*63	11	0	130
3433	028.4				32	14	0	77
3541	029.0				11	6	0	27
3648	029.6				0	0	0	0
CIC		0	1006	2437	1027	604	0	
Peak		0	77	114	64	45	0	
Pass		6	5	4	3	2	1	

Keystone #12
24 October 1967
0711-0728 EST

Arc 4.8 km
Ref Pt 014
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 317	380	447	507	537	557	607	VIC
0	005.0	0	0	0					0
107	006.3	0	6	9					26
215	007.6	0	13	19					54
322	008.9	0	16	56					124
429	010.2	0	61	118					306
536	011.4	0	30	71					174
644	012.7	0	*75	124	0				341
751	014.0	0	25	127	5				263
858	015.3		9	*159	9		0		298
966	016.6		0	115	*59		12		276
1073	017.8			110	98		35		338
1180	019.1			43	57	0	*75		213
1287	020.4			7	6	6	49	0	69
1395	021.7			0	0	*28	29	5	52
1502	023.0					90	4	*5	70
1609	024.2					19	6	43	76
1717	025.5					15	0	29	49
1824	026.8					6		12	20
1931	028.1					0		6	8
2039	029.4							0	0
CIC		0	674	2749	671	470	601	285	
Peak		0	87	176	109	100	75	45	
Pass		7	6	5	1	2	3	4	

Keystone #14
24 October 1967
0752-0818 EST

Arc 16.0 km
Ref Pt 300° (Arbitrary)
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 317	377	440	507	567	627	VIC
0	344.2	0	0					0
107	344.6	0	8					13
215	345.0	0	16					27
322	345.4	0	18					29
429	345.8	0	29					46
536	346.2	0	16					27
644	346.6	0	15					25
751	346.9	0	12					19
858	347.3	0	20					33
966	347.7	0	23					38
1073	348.1	0	37					62
1180	348.5	0	35					58
1287	348.9	0	52					85
1395	349.2	0	40					65
1502	349.6	0	48					79
1609	350.0	0	*53					87
1717	350.4	0	26					42
1824	350.8	0	26					43
1931	351.2	0	9	0				15
2039	351.5		9	13				38
2146	351.9		13	25				64

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #15
26 October 1967
0715-0736 EST

Arc 4.8 km
Ref Pt 069°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 430	494	550	602	672	740	792	VIC
0	065.2	0	0			0			0
107	066.4	0	7			5			20
215	067.7	0	8		0	12	0	0	35
322	069.0	0	20	0	2	•37	2	5	115
429	070.3	0	•64	11	19	25	29	•11	256
536	071.6	0	34	12	•75	21	34	7	297
644	072.8	0	39	59	•19	21	37	2	279
751	074.1	0	12	•61	37	35	•52	0	317
858	075.4		9	26	43	4	20		171
966	076.7		0	6	14	4	7		49
1073	078.0			11	7	0	0		27
1180	079.2			6	0				8
1287	080.5			0					0
CIC		0	354	543	637	466	523	70	
Peak		0	94	71	75	40	53	16	
Pass		7	6	5	4	1	2	3	

Keystone #17
27 October 1967
0711-0720 EST

Arc 4.8 km
Ref Pt 329°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 290	353	420	480	500	VIC
0	322.6	0	0				0
107	323.9	0	5			0	8
215	325.2	0	7		0	0	12
322	326.4	0	25	0	8	0	51
429	327.7	0	•39	2	47	0	121
536	329.0	0	1	53	173	0	277
644	330.3	0	1	286	•196	0	696
751	331.6		0	•349	0		592
858	332.8			322			546
966	334.1			39			66
1073	335.4			9			16
1180	336.7			0			0
CIC		0	221	3038	1215	0	
Peak		0	108	349	196	0	
Pass		4	3	2	5	1	

Keystone #18
27 October 1967
0730-0741 EST

Arc 10.0 km
Ref Pt 331°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 295	365	420	478	550	VIC
0	322.4	0	0				0
107	323.0	0	4				6
215	323.6	0	14				23
322	324.2	0	26				43
429	324.9	0	41	0			68
536	325.5	0	33	5			62
644	326.1	0	68	29			158
751	326.7	0	•104	105			333
858	327.3		12	87			150
966	327.9		0	•163		0	246
1073	328.5			156	0	0	235
1180	329.2			104	7	0	170
1287	329.8			1	39	0	69
1395	330.4			0	•110	0	191
1502	331.0				67	0	116
1609	331.6				94	0	163
1717	332.2				12	0	20
1824	332.8				0	0	0
CIC		0	862	1863	940	0	
Peak		0	108	163	115	0	
Pass		5	4	3	1	2	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #19
27 October 1967
0746-0801 EST

Arc 16.0 km
Ref Pt 360° (Arbitrary)
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 363	380	420	480	VIC
0	354.6		0			0
107	355.0	0	1			1
215	355.4	0	•16	0		12
322	355.8	0	13	1		11
429	356.2	0	1	4		6
536	356.5	0	0	89		119
644	356.9	0		73		97
751	357.3	0		48		64
858	357.7	0		•103	0	138
966	358.1			41	7	66
1073	358.5			27	5	44
1180	358.8			29	6	49
1287	359.2			59	4	84
1395	359.6			70	6	103
1502	360.0			74	6	108
1609	000.4			11	5	22
1717	000.8			4	•19	35
1824	001.2			0	9	15
1931	001.5				1	2
2039	001.9				1	2
2146	002.3				1	2
2253	002.7				2	4
2360	003.1				0	0
CIC		0	90	1809	204	
Peak		0	17	104	20	
Pass		2	3	1	4	

Keystone #21
28 October 1967
0725-0748 EST

Arc 10.0 km
Ref Pt 081°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 300	370	423	496	546	610	677	733	VIC
0	067.5	0								0
107	068.1	2								4
215	068.7	11								20
322	069.3	14								26
429	069.9	•13	0							24
536	070.5	7	7							25
644	071.2	6	0							24
751	071.8	0	19							31
858	072.4		30	0						50
966	073.0		36	4						66
1073	073.6		•39	15						89
1180	074.2		18	21						64
1287	074.9		13	29		0				70
1395	075.5		2	28		5				58
1502	076.1		0	•28	0	11				63
1609	076.7			19	37	21		0		125
1717	077.3			13	53	15	0	6		141
1824	077.9			6	•46	•29	1	12		151
1931	078.5			0	45	22	5	•20		148
2039	079.2				35	26	13	11		137
2146	079.8				12	18	27	4		99
2253	080.4				6	12	•34	16		114
2360	081.0				0	16	22	8	0	77
2468	081.6					2	14	12	•9	61
2575	082.2					0	12	12	11	56
2682	082.8						4	2	0	10
2790	083.5						0	5		8
2897	084.1							2		4
3004	084.7							0		0
CIC		151	493	466	668	507	376	312	57	
Peak		18	41	34	55	32	35	22	18	
Pass		8	7	6	1	2	3	4	5	

Keystone #20
28 October 1967
0710-0722 EST

Arc 4.8 km
Ref Pt 068°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 260	300	367	423	485	545	606	VIC
0	065.4	0	0	0					0
107	066.7	0	7	12		0			29
215	068.0	0	11	35		4			79
322	069.3	0	13	50	0	8			115
429	070.6	0	13	•81	1	7			165
536	071.8	0	•14	63	57	14		0	237
644	073.1	0	13	27	61	•63		1	264
751	074.4		7	13	84	45	0	•13	257
858	075.7		0	4	•84	37	16	1	228
966	077.0			0	33	11	40	0	13[illegible]
1073	078.2				14	1	•33		7[illegible]
1180	079.5				7	0	9		26
1287	080.8				0		2		4
1395	082.1						0		0
CIC		0	221	815	980	550	288	43	
Peak		0	16	82	91	66	60	42	
Pass		7	6	5	4	3	2	1	

Keystone #22
28 October 1967
0757-0817 EST

Arc 16.0 km
Ref Pt 069°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 297	360	420	484	542	617	670	730	VIC
0	062.5	0								0
107	062.9	6								10
215	063.2	6								10
322	063.6	7								12
429	064.0	12	0							20
536	064.4	•12	4							25
644	064.8	11	8	0						31
751	065.2	6	14	5						41
858	065.5	5	•14	7						45
966	065.9	0	11	13						39
1073	066.3		7	22	0					48
1180	066.7		0	20	4					39
1287	067.1			•30	4					56
1395	067.5			26	4					48
1502	067.8			19	14					54
1609	068.2			12	12					38
1717	068.6			0	23					38
1824	069.0				30		0			50
1931	069.4				•37		6			71
2039	069.8				32		5			60
2146	070.2				16	0	13			49
2253	070.5				12	1	•37	0		85
2360	070.9				9	21	28	1	0	103
2468	071.3				16	28	28	6	0	134
2575	071.7				9	•32	22	9	0	124
2682	072.1				8	30	18	6	0	106
2790	072.5				0	18	19	•11	0	79
2897	072.8					9	21	6	0	62
3004	073.2					5	19	5	0	47
3111	073.6					0	18	5	0	37
3219	074.0						5	0	0	8
3326	074.4						7			12
3433	074.8						5			8
3541	075.1						0			0
CIC		181	164	443	661	412	715	137	0	
Peak		15	20	32	37	34	37	11	0	
Pass		7	8	6	5	1	2	3	4	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #23 Arc 3.0 km
29 October 1967 Ref Pt 270°
[illegible] EST SO$_2$ in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 362	436	492	545	612	672	742	802	VIC
0	265.2					0				0
107	[illegible]				0	2				2
215	267.8				48	4				100
322	[illegible]				21	14				73
429	270.2				60	7				117
536	271.6			0	138	82				301
644	272.8			1	*156	*109				450
751	274.2			20	175	77				334
858	275.4	0		*138	313	97				560
966	276.7	0		101	143	108				494
1073	278.0	0		72	132	87	0			339
1180	279.3	0	[illegible]	14	61	17	8			196
1287	280.6	0	*47	5	8	0	*37			175
1395	281.8	0	41	0	6		33			119
1502	283.1	0	[illegible]				19			42
1609	284.4	0	8				21			36
1717	285.7	0	6				17			34
1824	287.0		0				7			12
1931	288.2						4	0		6
2039	289.5						0	6	0	10
2146	290.8							5	0	9
2253	292.1							2	0	4
2360	293.4							0	0	0
2468	294.6							*4	0	6
2575	296.0							9	0	16
2682	297.2							3	0	6
2790	298.5							6	3	10
2897	299.8							0	0	0
CIC		0	349	362	2932	1027	422	101	0	
Peak		0	47	147	156	109	37	11	0	
Pass		8	7	6	1	2	3	4	5	

Keystone #24 Arc 10.0 km
29 October 1967 Ref Pt 273°
0726-0742 EST SO$_2$ in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 362	437	492	552	607	660	VIC
0	268.7				0			0
107	269.3				5			7
215	269.9				9			15
322	270.5				12			18
429	271.2				31			47
536	271.8				55		0	85
644	272.4				65		0	100
751	273.0				98	0	0	150
858	273.6				119	2	0	186
966	274.2			0	138	6	0	221
1073	274.8			1	*140	4	0	223
1180	275.5			9	139	5	0	235
1287	276.1	0		*46	114	*25	0	272
1395	276.7	0		63	99	79	0	393
1502	277.3	0		54	92	97	0	364
1609	277.9	0	0	32	13	76	0	170
1717	278.5	0	13	52	7	44	0	176
1824	279.1	0	22	25	0	18	0	103
1931	279.8	0	5	18		2	0	39
2039	280.4	0	30	9		8	0	78
2146	281.0	0	*20	3		26	0	67
2253	281.6	0	6	0		17	0	34
2360	282.2	0	9			17	0	40
2468	282.8	0	11			5	0	25
2575	283.4		17			24	0	63
2682	284.1		8			19	0	42
2790	284.7		8			31	0	59
2897	285.3		7			20	0	41
3004	285.9		0			13		19
3111	286.5					0		0
CIC		0	446	970	3260	1532	0	
Peak		0	34	96	140	106	0	
Pass		6	5	4	1	2	3	

Keystone #25 Arc [illegible] km
29 October 1967 Ref Pt 314°
[illegible] EST SO$_2$ in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 337	386	462	512	562	635	692	762	VIC
0	314.0					0				0
107	315.3					12				19
215	316.6					65		0		107
322	317.8	0				18		6		39
429	319.1	0			0	42		74		225
536	320.4	0	16		8	15		63		142
644	321.7	0	11		*42	*143	0	14		333
751	323.0	0	*25	0	18	41	44	*67		323
858	324.3	0	4	1	9	0	72	70	0	258
966	325.5	0		25	11		71	22	2	220
1073	326.8	0		*12	0		96	0	4	209
1180	328.1			7			123		0	217
1287	329.4			0			*18		0	33
1395	330.6						1		*29	55
1502	331.9						0		2	4
1609	333.2								0	0
CIC		0	101	145	253	1021	1214	808	104	
Peak		0	40	51	60	176	148	79	32	
Pass		8	7	6	5	1	2	3	4	

Keystone #26 Arc 10.0 km
29 October 1967 Ref Pt 304°
0937-0957 EST SO$_2$ in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 382	462	522	587	642	675	762	820	VIC
0	304.0		0		0					0
107	304.6	0	2		2					8
215	305.2	2	6		13					35
322	305.8	*2	*25		9					65
429	306.5	0	15		25					68
536	307.1		3		*63		0			107
644	307.7		2	0	73	0	6			129
751	308.3		0	9	70	15	30			193
858	308.9			50	39	27	44		0	247
966	309.5			49	0	63	*48	0	0	233
1073	310.1			42		61	40	2	0	209
1180	310.8			90		85	26	*6	0	239
1287	311.4			54		*80	0	1	0	187
1395	312.0			53		80		0	0	183
1502	312.6			*59		79		3	0	196
1609	313.2			26		14		0	0	39
1717	313.8			4		3				10
1824	314.4			0		0				0
CIC		11	149	1131	842	1452	559	36	0	
Peak		3	25	63	78	95	51	7	0	
Pass		8	7	6	1	2	3	4	5	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #27
30 October 1967
0707-0723 EST

Arc 4.8 km
Ref Pt 013
SO2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 345	370	400	435	437	470	495	VIC
0	348.7		0						0
107	349.9		1						1
215	351.2	0	11						8
322	352.5	0	*47						34
429	353.8	0	12						9
536	355.1	0	18						13
644	356.4	0	13	0	2				13
751	357.6	0	3	14	1				11
858	358.9	0	8	77	47				59
966	000.2	0		*305	583				431
1073	001.5	0		225	756				479
1180	002.8			120	*763				433
1287	004.0			49	547				293
1395	005.3			46	172				106
1502	006.6			22	80				50
1609	007.9			0	42			0	21
1717	009.2				0	0		0	0
1824	010.4					179	0	0	156
1931	011.7					137	6	0	124
2039	013.0					121	11	0	113
2146	014.3					*281	116	0	334
2253	015.6					217	*47	0	220
2360	016.8					46	33	0	65
2468	018.1					5	4	0	7
2575	019.4					0	0	0	0
CIC		0	315	2657	8572	2810	617	0	
Peak		0	48	139	767	303	120	0	
Pass		6	5	2	4	2	1	1	

Keystone #29
30 October 1967
0932-0940 EST

Arc 4.8 km
Ref Pt 329
SO2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 460	515	580	610	VIC
0	322.6		0			0
107	323.9		11			17
215	325.2		99			144
322	326.4		504			608
429	327.7		*660			1017
536	329.0	0	573		0	917
644	330.3	6	585	0	0	947
751	331.6	*39	413	24	0	749
858	332.8	7	34	79	0	166
966	334.1	0	0	2	0	3
1073	335.4			0	0	0
1180	336.7			41	0	52
1287	338.0			*126	0	160
1395	339.2			93	0	118
1502	340.5			97	0	123
1609	341.8			46	0	59
1717	343.1			17	0	21
1824	344.4			2		3
1931	345.6			0		0
CIC		146	8222	1511	0	
Peak		52	660	126	0	
Pass		4	1	2	3	

Keystone #28
30 October 1967
0727-0802 EST

Arc 16.1 km
Ref Pt 011
SO2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 300	335	360	400	440	475	500	VIC
0	347.4			0	0				0
107	348.1		0	6	5				10
215	348.8		2	14	1				15
322	349.5		3	33	26				62
429	350.1		1	12	18				30
536	350.7		13	100	11				109
644	351.3	0	8	231	8				203
751	351.9	4	0	*313	37				315
858	352.6	4	34	241	76				396
966	353.2	*12	*45	70	*219				362
1073	353.8	5	43	18	20				76
1180	354.4	2	7	4	7				10
1287	355.0	0	42	0	184				230
1395	355.6		6		170				188
1502	356.2		0		182				194
1609	356.9				26				20
1717	357.5				4				4
1824	358.1				123				137
1931	358.7				15				16
2039	359.3				5				5
2146	359.9				4				4
2253	000.5				7				8
2360	001.2				40				45
2468	001.8				89				95
2575	002.4				23	0	0		25
2682	003.0				5	6	5		15
2790	003.6				0	32	20		48
2897	004.2					*279	98		356
3004	004.9					226	28	0	249
3111	005.5					259	2	0	261
3219	006.1					223	4	0	226
3326	006.7					8	2	0	10
3433	007.3					0	2	0	2
3541	007.9					0	2	0	4
3648	008.5					1	2	0	3
3755	009.1					50	21	0	67
3862	009.8					134	*186	0	283
3970	010.4					95	14	0	106
4077	011.0					59	1	0	60
4184	011.6					1	2	0	3
4292	012.2					22	2	0	24
4399	012.8					57	13	0	66
4506	013.5					1	56	0	46
4613	014.1					0	27	0	22
4721	014.7						34	0	27
4828	015.3						47	0	38
4935	015.9						53	0	42
5043	016.5						49	0	39
5150	017.1						41	0	33
5257	017.8						36	0	29
5364	018.4						11	0	8
5472	019.0						2	0	2
5579	019.6						6	0	5
5686	020.2						0	0	0
CIC		73	672	3095	3710	4163	2202	0	
Peak		16	122	352	227	294	191	0	
Pass		7	4	5	4	1	3	2	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #30　　Arc 8.0 km
31 October 1967　　Ref Pt 329°
0552-0718 EST　　SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 302	[illegible]	466	514	[illegible]	592	ΣC
0	329.[illegible]	0						0
107	329.[illegible]	[illegible]	1					1
215	330.[illegible]	[illegible]	•11					55
322	331.6	[illegible]	[illegible]					25
429	332.8	[illegible]	[illegible]	0				37
536	334.[illegible]	[illegible]	1	32				35
644	335.[illegible]	[illegible]	[illegible]	120				130
751	336.7			•213				202
858	338.[illegible]			224				262
966	339.2			[illegible]				163
1073	340.5			[illegible]				307
1180	341.8			172	2			375
1287	343.1			121	2			224
1395	344.4			92	7			150
1502	345.6			66	43			127
1609	346.8			0	175		0	205
1717	348.2				•136		0	233
1824	349.[illegible]				101	0	0	127
1931	350.[illegible]				11	14	0	23
2039	352.1				0	•13	0	17
2146	353.3					7	0	0
2253	354.6					[illegible]	0	0
CIC			553	3506	1065	62	0	
Peak		0	17	221	241	36	0	
Pass		4	3	4	2	1	1	

Keystone #31　　Arc 12.0 km
31 October 1967　　Ref Pt 350°
0718-0732 EST　　SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 294	371	434	466	ΣC
0	337.1	0				0
107	337.7	4				7
215	338.3	9				19
322	338.9	2				5
429	339.5	4				7
536	340.2	7				14
644	340.8	•18				36
751	341.4	7				5
858	342.0	4				7
966	342.6	4				7
1073	343.2	5				10
1180	343.9	14				29
1287	344.5	1				2
1395	345.1	0	0			0
1502	345.7		6			11
1609	346.3		34			64
1717	346.9		66			123
1824	347.5		46			85
1931	348.2		96			180
2039	348.8		•67			175
2146	349.4		1			2
2253	350.0		0	0	0	0
2360	350.6			12	0	15
2468	351.2			49	0	63
2575	351.8			•82	0	105
2682	352.5			5	0	6
2790	353.1			5	0	6
2897	353.7			49	0	63
3004	354.3			62	0	80
3111	354.9			26	0	33
3219	355.5			0	0	0
CIC		208	903	629	0	
Peak		28	155	95	0	
Pass		4	3	1	2	

Keystone #32　　Arc 16.0 km
31 October 1967　　Ref Pt 360° (Arbitrary)
0828-0847 EST　　SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 352	398	454	482	514	ΣC
0	348.5	0					0
107	348.9	4					3
215	349.2	2					2
322	349.6	5					5
429	350.0	5					5
536	350.4	4					4
644	350.8	10					9
751	351.2	7	8				8
858	351.5	5	6				11
966	351.9	•7	8				19
1073	352.3	7	12				24
1180	352.7	4	6				15
1287	353.1	0	9				13
1395	353.5		2				10
1502	353.9		9				13
1609	354.2		12				16
1717	354.6		11				14
1824	355.0		11				14
1931	355.4		16				22
2039	355.8		11				14
2146	356.2		16				27
2253	356.5		13				16
2360	356.9		8				11
2468	357.3		6				8
2575	357.7		6				8
2682	358.1		•19				26
2790	358.5		16	0			22
2897	358.8		11	7			23
3004	359.2		0	47			55
3111	359.6			57			67
3219	360.0			62			73
3326	000.4			55			65
3433	000.8			62			73
3541	001.2			174	0		146
3648	001.5			•157	5		188
3755	001.9			145	8		177
3862	002.3			84	8		106
3970	002.7			19	11		30
4077	003.1			1	14		13
4184	003.5			0	7		6
4292	003.8				6	0	5
4399	004.2				11	2	10
4506	004.6				23	•7	25
4613	005.0				•35	6	33
4721	005.4				2	11	11
4828	005.8				2	2	4
4935	006.1				0	0	0
CIC		167	607	2353	379	80	
Peak		9	27	157	42	13	
Pass		5	4	1	3	2	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #[illegible] Dec [illegible] km
[illegible] 1969 Ref [illegible]
[illegible] EST SO2 in pphm

Time (s)	Azim (°)	Traverse height (m) [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	[illegible]	[illegible]	[illegible]								[illegible]
107	[illegible]	[illegible]	[illegible]								[illegible]
215	[illegible]	[illegible]	[illegible]								[illegible]
322	[illegible]	[illegible]	[illegible]								[illegible]
429	[illegible]	[illegible]	[illegible]								[illegible]
536	[illegible]	[illegible]	[illegible]								[illegible]
644	[illegible]	[illegible]	[illegible]								[illegible]
751	[illegible]	[illegible]	[illegible]								[illegible]
858	[illegible]	[illegible]	[illegible]								[illegible]
966	[illegible]	[illegible]	[illegible]								[illegible]
1073	[illegible]	[illegible]	[illegible]								[illegible]
1180	[illegible]	[illegible]	[illegible]								[illegible]
1287	[illegible]	[illegible]	[illegible]								[illegible]
1395	[illegible]	[illegible]	[illegible]								[illegible]
1502	[illegible]	[illegible]	[illegible]								[illegible]
1609	[illegible]	[illegible]	[illegible]								[illegible]
1717	[illegible]	[illegible]	[illegible]								[illegible]
1824	[illegible]		[illegible]								[illegible]
1931	[illegible]		[illegible]								[illegible]
2039	[illegible]		[illegible]								[illegible]
2146	[illegible]		[illegible]								[illegible]
2253	[illegible]		[illegible]								[illegible]
2360	[illegible]			[illegible]							[illegible]
2468	[illegible]			[illegible]							[illegible]
2575	[illegible]			[illegible]							[illegible]
2682	[illegible]			[illegible]							[illegible]
2790	021.8			8	1						[illegible]
2897	022.2			1	4						[illegible]
3004	022.8			8	2	[illegible]					[illegible]
3111	023.5			*16	4	[illegible]					[illegible]
3219	024.1			10	6	[illegible]					[illegible]
3326	024.7			[illegible]	2	[illegible]					[illegible]
3433	025.3			[illegible]	3	4					[illegible]
3541	025.9			5	6	[illegible]					[illegible]
3648	026.5			8	12	[illegible]					[illegible]
3755	027.1			2	8	[illegible]					[illegible]
3862	027.8			[illegible]	7	[illegible]					[illegible]
3970	028.4				13	[illegible]					[illegible]
4077	029.0				17	[illegible]					[illegible]
4184	029.6				19	[illegible]					[illegible]
4292	030.2				21	[illegible]					[illegible]
4399	030.8				25	[illegible]					[illegible]
4506	031.5				36	[illegible]					[illegible]
4613	032.1				30	[illegible]					[illegible]
4721	032.7				3	[illegible]					[illegible]
4828	033.3				10	[illegible]	0				43
4935	033.9				27	[illegible]	4				63
5043	034.5				32	[illegible]	1				50
5150	035.1				*34	5	0				56
5257	035.8				20	8	0				49
5364	036.4				2	34	0				61
5472	037.0				8	30	10	0			92
5579	037.6				7	51	33	10	0		175
5686	038.2				1	*60	63	22	25	0	209
5794	038.8				0	58	*61	*47	*40	0	257
5901	039.4					56	57	13	13	0	260
6008	040.1					20	21	4	1	0	77
6115	040.7					3	12	0	0	0	28
6223	041.3					0	0			0	0
CIC		0	415	775	955	1100	758	797	289	0	
Peak		0	16	18	37	69	69	43	49	0	
Pass		3	1	2	4	5	6	7	8	9	

Keystone #[illegible] Dec [illegible] km
[illegible] 1969 Ref [illegible]
[illegible] EST SO2 in pphm

Time (s)	Azim (°)	Traverse height (m) [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	[illegible]					0		[illegible]
134	[illegible]					[illegible]		[illegible]
268	[illegible]					[illegible]		[illegible]
402	[illegible]	[illegible]	[illegible]			[illegible]	0	[illegible]
536	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]
671	[illegible]	[illegible]	[illegible]	0		[illegible]	[illegible]	[illegible]
805	[illegible]	[illegible]	*[illegible]	[illegible]	0	*[illegible]	[illegible]	[illegible]
939	[illegible]	[illegible]	[illegible]	[illegible]	4	[illegible]	[illegible]	[illegible]
1073	[illegible]	[illegible]	[illegible]	9	31	[illegible]	[illegible]	[illegible]
1207	[illegible]	[illegible]	[illegible]	10	12	[illegible]	[illegible]	[illegible]
1341	[illegible]	[illegible]	[illegible]	14	22	[illegible]	[illegible]	[illegible]
1475	[illegible]	[illegible]	[illegible]	16	27	[illegible]	[illegible]	[illegible]
1609	[illegible]	[illegible]	[illegible]	14	27	[illegible]	[illegible]	[illegible]
1743	[illegible]	[illegible]	[illegible]	19	29	[illegible]	[illegible]	[illegible]
1877	[illegible]	[illegible]	[illegible]	19	38	[illegible]	[illegible]	[illegible]
2012	[illegible]	[illegible]	[illegible]	21	38	[illegible]	[illegible]	[illegible]
2146	[illegible]		[illegible]	*17	40	[illegible]	[illegible]	[illegible]
2280	[illegible]		[illegible]	20	*41	[illegible]	[illegible]	[illegible]
2414	[illegible]			13	37		[illegible]	[illegible]
2548	[illegible]			13	43		[illegible]	[illegible]
2682	[illegible]			26	37			[illegible]
2816	[illegible]			34	40			[illegible]
2950	[illegible]			18	40			[illegible]
3085	[illegible]			34	37			[illegible]
3219	[illegible]			11	43			[illegible]
3353	[illegible]			15	37			[illegible]
3487	[illegible]			15	41			[illegible]
3621	[illegible]			4	43			[illegible]
3755	[illegible]			7	43			[illegible]
3889	[illegible]			0	26			[illegible]
4023	[illegible]				13			[illegible]
4157	[illegible]				0			
CIC		0	433	1142	2795	580	0	
Peak		0	14	33	42	74	0	
Pass		2	1	3	4	5	6	

Keystone #[illegible] Dec 8.3 km
3 April 1969 Ref [illegible]
[illegible] EST SO2 in pphm

Time (s)	Azim (°)	Traverse height (m) 381	417	490	552	616	637	670	[illegible]
0	001.3		0						0
134	003.2		6			0			6
268	005.1		5			4			14
402	007.0		5			6			16
536	008.9		5			7			10
671	010.8		4			7			18
805	012.8		6			7			19
939	014.7		7			6			22
1073	016.6		7			7			21
1207	018.5		7			8			22
1341	020.4		8			7			21
1475	022.4		8			8			24
1609	024.3		15			8			36
1743	026.2		10			10			29
1877	028.1		11			12			33
2012	030.1		13			11			36
2146	032.0		16			12			41
2280	033.9		20		0	10			47
2414	035.8		27		14	13			58
2548	037.7		33		14	12			65
2682	039.7	0	33		17	10			100
2816	041.6	4	35		18	13			115
2950	043.5	7	*40		22	15			137
3085	045.4	4	39		22	19		0	135
3219	047.3	7	37		26	19		2	146
3353	049.3	7	36		32	18		3	155
3487	051.2	8	29	0	35	14		3	143
3621	053.1	7	21	2	40	11		4	135
3755	055.0	7	16	7	52	14		5	159
3889	056.9	8	10	10	58	16		4	167
4023	058.9	8	6	10	94	22		4	207
4157	060.8	7	5	11	119	27		8	289
4292	062.7	7	8	15	151	33		*6	379
4426	064.6	6	6	20	*154	48	0	5	360
4560	066.6	6	5	25	143	82	3	5	391
4694	068.5	8	6	28	145	*82	*1	5	402

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #211 (continued)

Cum y (m)	Dir (°)	Traverse Height (m) [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	VIC
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		311
[illegible]	[illegible]	[illegible]	[illegible]	33	[illegible]	[illegible]		4		290
[illegible]	[illegible]	[illegible]	[illegible]	41	[illegible]	[illegible]		2		198
[illegible]	[illegible]	7	[illegible]	56		[illegible]		2		132
[illegible]	[illegible]	[illegible]	[illegible]	•62	1	[illegible]		[illegible]		100
[illegible]	[illegible]	[illegible]	[illegible]	63	4			1		126
[illegible]	[illegible]	4	[illegible]	49	4			4		100
[illegible]	[illegible]	[illegible]	[illegible]	36	4			[illegible]		72
[illegible]	[illegible]		[illegible]	47	[illegible]			[illegible]		80
[illegible]	[illegible]		[illegible]	41	[illegible]			1		78
[illegible]	[illegible]		[illegible]	38	[illegible]			[illegible]		62
[illegible]	[illegible]		[illegible]	25	[illegible]			0		54
[illegible]	[illegible]		[illegible]	20	[illegible]			1		49
[illegible]	[illegible]		[illegible]	20	[illegible]			0		49
[illegible]	[illegible]		[illegible]	18	[illegible]					36
[illegible]	[illegible]		[illegible]	11	[illegible]					27
[illegible]	[illegible]			[illegible]						24
[illegible]	[illegible]									9
[illegible]	[illegible]		[illegible]							10
[illegible]	[illegible]									13
[illegible]	[illegible]									11
[illegible]	[illegible]									9
[illegible]	[illegible]									0
CIC		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	
Peak		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	
Pass		[illegible]	[illegible]	[illegible]	4	[illegible]		[illegible]	6	

Keystone #212 Arc 4.0 km
9 April 1969 Ref Pt 356°
0653-0706 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 320	350	458	491	516	544	VIC
0	357.9				0			0
134	359.8				31			24
268	001.8		0		•105		0	81
402	003.7	0	•19		135	0	0	139
536	005.6	•17	0	0	0	0	0	20
671	007.5	1		14		•152	0	135
805	009.4	0		113		2	0	214
939	011.4			124		0	0	234
1073	013.3			•242				456
1207	015.2			102				193
1341	017.1			27				50
1475	019.1			0				0
CIC		61	66	2229	970	583	0	
Peak		20	22	249	280	157	0	
Pass		2	3	4	1	5	6	

Keystone #213 Arc [illegible] km
9 April 1969 Ref Pt [illegible]
[illegible] EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) [illegible]	[illegible]	262	306	335	454	485	509	VIC
0	[illegible]	[illegible]	[illegible]							0
134	309.7	[illegible]	1							1
268	310.[illegible]	[illegible]								0
402	311.3	0								0
536	312.[illegible]	0								0
671	312.8	[illegible]								[illegible]
805	313.6	[illegible]								0
939	314.3	[illegible]								[illegible]
1073	315.1	[illegible]	[illegible]							[illegible]
1207	315.9	[illegible]	[illegible]							[illegible]
1341	316.6	[illegible]	[illegible]							2
1475	317.4	[illegible]	•[illegible]							2
1609	318.[illegible]	0	[illegible]							2
1743	318.9	0	[illegible]							1
1878	319.7	0	[illegible]							0
2012	320.5	0	[illegible]							2
2146	321.2		[illegible]							2
2280	322.0		[illegible]	0						0
2414	322.8			•6						7
2548	323.5			0	0					0
2682	324.3			0	[illegible]					12
2816	325.1			0	25					36
2950	325.9			0	34					50
3085	326.6			2	•39					60
3219	327.4			0	35					52
3353	328.2				28					42
3487	328.9				13					19
3621	329.7				0					0
3755	330.5									0
3889	331.2					0				0
4023	332.0					5				9
4157	332.8					49				91
4292	333.5					102				188
4426	334.3					115				212
4560	335.1					•134	0			246
4694	335.8					97	63			254
4828	336.6					16	84			156
4962	337.4					0	•116			174
5096	338.1						59	0		133
5230	338.9						[illegible]	0	0	6
5364	339.7							•52	•2	39
5499	340.5							14	0	10
5633	341.2							0		0
CIC		0	92	29	650	1017	1263	264	8	
Peak		0	6	7	42	136	124	55	3	
Pass		2	4	3	2	1	6	8	7	

Keystone #214 Arc 16.0 km
9 April 1969 Ref Pt 325°
0742-0809 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 196	226	250	316	376	454	474	515	VIC
0	315.9		0							0
134	316.4		3							2
268	316.8		1							1
402	317.3		1							1
536	317.8		1							1
671	318.3		1	0						1
805	318.8		2	1						3
939	319.2		1	2						3
1073	319.7		2	2						3
1207	320.2		3	2						5
1341	320.7		2	2						4
1475	321.2	0	3	2						5
1609	321.6	2	4	1						6
1743	322.1	1	•4	5						10
1878	322.6	1	4	2						6
2012	323.1	•2	2	4						9
2146	323.6	1	2	6						9
2280	324.0	0	3	12						17
2414	324.5		2	3						6
2548	325.0		0	2						3
2682	325.5			2						2
2816	326.0			2		0				3
2950	326.4			1		24				47
3085	326.9			2	0	•186				345
3219	327.4			3	3	123				237
3353	327.9			3	25	4				52
3487	328.4			1	2	0				6
3621	328.8			2	•70					120
3755	329.3			28	53					123
3889	329.8			18	8					36
4023	330.3			25	35					89
4157	330.8			•35	35					101
4292	331.2			5	0					6
4426	331.7			3			0			4
4560	332.2			2			24			34
4694	332.7			1			30	0		40
4828	333.2			0			62	5	0	85
4962	333.6						•85	22	0	130
5096	334.1						14	28	0	41
5230	334.6						3	•47	0	42
5364	335.1						0	3	0	2
5499	335.6							0	0	0
CIC		24	149	649	833	1209	778	375	0	
Peak		2	5	36	81	195	102	48	0	
Pass		7	8	6	5	1	2	4	3	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #215
10 April 1969
0708-0720 EST

Arc 4.0 km
Ref Pt 047
SO_2 in pphm

Cum y (m)	Dir (°)	122	200	260	328	[illegible]	390	436	510	580	637	660	VIC
							0			0			0
0	027.8						81			9			70
134	029.7			0			•90			66			110
268	031.6			7			54			•84			224
402	033.6	0		•22			43			0			51
536	035.5	•2	0	5			50	0					51
671	037.4	0	4	0	0		9	•29	0		0	0	76
805	039.3		0		13		0	32	107		7	0	279
939	041.2		0		18			0	174		•226	0	546
1073	043.2		4		•45	0			•215		199	0	663
1207	045.1		•12		26	3			48		0	0	53
1341	047.0		7		4	•19			0			0	16
1475	048.9		0		0	7							8
1609	050.8					9							0
1743	052.8					0							
CIC		8	92	121	373	186	1175	210	1704	670	1510	[illegible]	
Peak		3	14	22	48	22	111	37	224	100	230	[illegible]	
Pass		11	10	9	8	3	7	2	1	4	5	6	

Keystone #217
10 April 1969
0814-0833 EST

Arc 16.0 km
Ref Pt 051
SO_2 in pphm

Cum y (m)	Dir (°)	140	260	395	510	625	760	VIC
0	041.4	0						0
134	041.9	2						6
268	042.4	2						6
402	042.8	5						16
536	043.3	4				0		13
671	043.8	6		0		6		39
805	044.3	6		4	0	1		36
939	044.8	7	0	19	2	2		99
1073	045.2	•5	5	22	2	4		126
12[illegible]	045.7	2	8	•16	1	7	0	114
1341	046.2	4	11	21	5	14	1	139
1475	046.7	4	•6	14	6	12	1	149
1609	047.2	5	8	[illegible]	0	•8	•5	105
1743	047.6	0	9	7	8	1	2	47
1878	048.1		6	1	7	0	0	45
2012	048.6		2	1	7			34
2146	049.1		0	0	4			16
2280	049.6				8			26
2414	050.0				5			15
2548	050.5				3			11
2682	051.0				•16			50
2816	051.5				9			24
2950	052.0				6			18
3085	052.4				0			0
CIC		160	197	372	323	108	33	
Peak		8	12	23	16	15	7	
Pass		4	5	4	1	2	3	

Keystone #216
10 April 1969
0733-0808 EST

Arc 10.0 km
Ref Pt 046
SO_2 in pphm

Cum y (m)	Dir (°)	130	200	266	330	[illegible]	445	[illegible]	[illegible]	639	691	746	780	VIC
														0
0	027.6						[illegible]							[illegible]
134	028.3						7							[illegible]
268	029.1						7							[illegible]
402	029.9						11							24
536	030.6						14							[illegible]
671	031.4						4							42
805	032.2						15							[illegible]
939	032.9						11							[illegible]
1073	033.7						•[illegible]	0						[illegible]
1207	034.5						[illegible]	6						[illegible]
1341	035.2						[illegible]	4						[illegible]
1475	036.0					0	[illegible]	[illegible]						[illegible]
1609	036.8	0				7	8	0						24
1743	037.5	4				14	14	1						[illegible]
1878	038.3	•4				•21	11	2	0					[illegible]
2012	039.1	4				11	16	2	4					60
2146	039.9	3		0		9	12	7	11					[illegible]
2280	040.6	0		1		12	1	14	•16					31
2414	041.4			0		2	1	6	9					13
2548	042.2			1		[illegible]	0	7	7	0				35
2682	042.9		0	8	0	1		4	7	2				[illegible]
2816	043.7		•6	12	1	0		8	5	7	0			23
2950	044.5		1	•13	7			•15	0	7	5			27
3085	045.2		4	5	6			14	7	7	•[illegible]		0	72
3219	046.0		4	0	8			11	8	7	2		1	75
3353	046.8		4		•28			0	6	0	1		1	45
3487	047.5		1		20				5	1	0		0	45
3621	048.3		2		21				4	2	1		0	26
3755	049.1		0		11				1	5	2		0	10
3889	049.8				0				0	2	4		4	12
4023	050.6									7	0	0	6	15
4157	051.4									9	2	4	1	27
4292	052.1									•11	2	•5	0	24
4426	052.9									9	0	0	0	13
4560	053.7									9			•4	16
4694	054.5									5			0	8
4828	055.2									0				0
4962	056.0													
CIC		46	75	142	365	293	847	394	323	327	96	29	79	
Peak		5	6	13	28	23	35	15	16	14	7	6	15	
Pass		4	3	2	1	5	6	7	8	9	10	11	12	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #218
11 April 1969
0700-0744 EST

Arc 3.0 km
Ref Pt 144
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 250	305	374	435	497	555	615	678	740	802	869	915	965	VIC
0	124.8											0			0
134	126.7									0		8			12
268	128.6						0			•23		•29			75
402	130.6					3	1		0	26		15		0	68
536	132.5			0		8	41		6	13	0	2		9	123
671	134.4			6		20	•55		[illegible]	7	•34	0		13	219
805	136.3	[illegible]		3		9	74	0	24	8	31	0		20	181
939	138.2	[illegible]	1	•14		16	1	7	•30		23	1		•20	194
1073	140.2	[illegible]	[illegible]	14		14	0	41	16		22	0	0	0	200
1207	142.1	1	2	12	0	•16		•117	12		30	1	•37		372
1341	144.0	•[illegible]	8	12	20	21		114	12		31	0	24		404
1475	145.9	•[illegible]	[illegible]	6	45	14		49	1		20	5	10		266
1609	147.8	[illegible]	[illegible]	5	52	10		7	6		0	5	0		159
1743	149.8		[illegible]	0	•77	0		0	[illegible]			0			142
1878	151.7		•[illegible]		42				15						106
2012	153.6		1		0				23						39
2146	155.5		1						17						20
2280	157.4		[illegible]						1						4
2414	159.4		[illegible]						0						4
2548	161.3		1												6
2682	163.2		0												0
CIC		25	124	254	866	445	437	1209	624	258	682	204	258	220	
Peak		7	6	19	77	22	59	121	30	27	37	29	40	22	
Pass		4	3	2	1	5	6	7	8	9	10	11	12	13	

Keystone #219
11 April 1969
0750-0829 EST

Arc 12.0 km
Ref Pt 133
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 122	235	361	495	615	740	863	983	1075	VIC
0	128.4										0
134	129.2										1
268	129.9							0	0		1
402	130.7							1	2		9
536	131.5						0	1	9		30
671	132.2						2	0	4		20
805	133.0						8	1	9		54
939	133.6						•9	2	•15		77
1073	134.5						8	2	14	0	71
1207	135.3			0			8	1	9	1	58
1341	136.1			2			7	2	9	4	73
1475	136.8			3			7	1	9	5	75
1609	137.6	0	0	4			6	1	7	3	69
1743	138.4	1	1	4			3	4	7	2	70
1878	139.1	1	2	4		0	3	4	6	5	74
2012	139.9	1	1	6		5	0	3	4	2	86
2146	140.7	3	3	4		5		4	5	6	96
2280	141.5	3	3	1		4		3	7	7	79
2414	142.2	1	6	1		4		4	5	6	81
2548	143.0	2	3	3		3		3	5	6	74
2682	143.8	3	3	8	0	7		3	5	4	104
2616	144.5	2	2	5	2	3		3	7	5	89
2950	145.3	2	1	•6	6	3		3	11	1	104
3085	146.1	•3	2	8	5	5		3	10	2	115
3219	146.8	2	•5	8	5	7		1	6	4	124
3353	147.6	0	4	5	7	•9		1	5	5	113

Keystone #219 (continued)

Cum y (m)	Dir (°)	Traverse Height (m) 122	235	361	495	615	740	863	983	1075	VIC
3487	148.4		6	5	7	6		1	3	3	103
3621	149.1		4	5	5	5		7	0	7	102
3755	149.9		2	5	5	6		•9		4	103
3889	150.7		3	5	9	3		2		3	83
4023	151.4		0	4	•10	0		0		3	53
4157	152.2			0	7					2	22
4292	153.0			2	4					2	25
4426	153.7			3	5					8	45
4560	154.5			4	0					8	32
4694	155.3			3						8	32
4828	156.1			2						7	25
4962	156.8			0						8	20
5096	157.6			2						8	26
5230	158.4			0						12	30
5364	159.1									•15	36
5499	159.9									14	35
5633	160.7									8	19
5767	161.4									5	13
5901	162.2									4	11
6035	163.0									3	9
6169	163.7									3	7
6303	164.5									4	9
6437	165.3									4	11
6571	166.0									0	0
CIC		83	180	395	272	276	216	262	628	776	
Peak		4	7	9	10	10	9	9	16	15	
Pass		9	8	7	6	5	1	2	3	4	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #220
11 April 1969
0836-0908 EST

Arc 16.0 km
Ref Pt 153°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)						VIC
		123	242	365	495	611	795	
0	130.9					0		0
134	131.4					3		13
268	131.9					3		14
402	132.3					3	0	12
536	132.8					2	3	10
671	133.3					3	6	26
805	133.8					2	•4	39
939	134.3					2	5	29
1073	134.8		0			2	4	31
1207	135.2		2			2	3	35
1341	135.7		2		0	3	3	32
1475	136.2		2		1	2	2	35
1609	136.7		1		2	2	1	29
1743	137.2		2		2	1	1	21
1878	137.6		3		3	2	1	36
2012	138.1		3		2	1	1	31
2146	138.6		1		•3	1	2	30
2280	139.1		3		5	2	2	45
2414	139.6		1		5	1	1	33
2548	140.0		7		4	0	2	47
2682	140.5		8		3	2	2	54
2816	141.0		7	0	5	4	2	66
2950	141.5	0	•9	1	2	7	3	66
3085	142.0	8	•9	4	3	1	4	105
3219	142.4	•10	7	3	3	2	4	100
3353	142.9	8	6	4	3	5	3	105
3487	143.4	9	7	2	2	6	3	108
3621	143.9	9	6	3	3	7	1	103
3755	144.4	7	6	3	2	•7	1	93
3889	144.8	8	4	3	1	6	2	85
4023	145.3	9	4	3	1	6	1	89
4157	145.8	8	1	4	1	3	1	68
4292	146.3	9	0	4	0	3	1	65
4426	146.8	9	0	5		1	0	52
4560	147.2	9	0	•6		0	0	53
4694	147.7	•10	0	5			3	64
4828	148.2	8	[illegible]	2			3	52
4962	148.7	7	[illegible]	1			2	33
5096	149.2	3	0	3			2	30
5230	149.6	3	1	4			1	32
5364	150.1	3	1	2			1	31
5499	150.6	0	1	0			2	19
5633	151.1		2	2			0	17
5767	151.6		0	1				5
5901	152.0			0				0
CIC		492	417	339	208	343	314	
Peak		10	9	6	7	8	7	
Pass		3	2	1	4	5	6	

Keystone #221
12 April 1969
0857-0923 EST

Arc 16.0 km
Ref Pt 246°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)							VIC
		121	255	376	505	572	630	741	
0	243.6				0				0
134	244.1				4				15
268	244.6				6				17
402	245.0			0	8				21
536	245.5			3	11				40
671	246.0			5	30				97
805	246.5			6	40	0			124
939	247.0			9	32	6			126
1073	247.4			10	•87	8			273
1207	247.9	0		11	87	9			280
1341	248.4	2		•9	16	4			84
1475	248.9	4		10	18	0	0		93
1609	249.4	6		4	7	15	7		96
1743	249.8	7		6	10	•30	15		156
1878	250.3	7	0	5	3	8	12		92
2012	250.8	9	2	4	1	9	12		97
2146	251.3	8	7	2	2	6	•21		121
2280	251.8	10	10	2	2	7	7		103
2414	252.2	12	14	2	0	6	0		106
2548	252.7	13	•16	1		5	13		138
2682	253.2	12	7	1		3	8		93
2816	253.7	12	5	1		2	3	0	73
2950	254.2	12	9	0		1	2	•5	94
3085	254.6	12	12			1	3	0	93
3219	255.1	12	11			0	1	1	88
3353	255.6	•13	12				3	0	95
3487	256.1	10	7				4		70
3621	256.6	6	8				0		49
3755	257.0	5	8				0		46
3889	257.5	6	5				0		39
4023	258.0	5	7				2		40
4157	258.5	5	6				2		43
4292	259.0	4	5				1		33
4426	259.4	3	4				1		28
4560	259.9	1	5				2		28
4694	260.4	0	5				0		18
4828	260.9		4						15
4962	261.4		4						13
5096	261.8		0						0
CIC		701	627	326	1307	436	419	22	
Peak		15	18	12	88	32	22	6	
Pass		7	6	5	1	2	3	4	

Keystone #222
14 April 1969
0656-0719 EST

Arc 4.0 km
Ref Pt 015
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)							VIC
		267	293	315	378	448	513	573	
0	346.2	0							0
134	348.1	2							2
268	350.0	1							1
402	351.9	•6		0					4
536	353.9	0		12					13
671	355.8	0	0	37					43
805	357.7	2	•7	71					84
939	359.6	0	0	•101					114
1073	001.6			9					11
1207	003.5			0					0
1341	005.4				0				0
1475	007.3				23				42
1609	009.2				80				142
1743	011.2				149				264
1678	013.1				•196				348
2012	015.0				182				323
2146	016.9				179	0			318
2280	018.8				104	15			213
2414	020.8				101	0			179
2548	022.7				0	0			0
2682	024.6					143			258
2816	026.5					•250			450
2950	028.4					243	0		417
3085	030.4					35	1	0	165
3219	032.3					0	98	0	164
3353	034.2						•124	0	207
3487	036.1						21	0	25
3621	038.1						6	0	10
3755	040.0						0	0	0
CIC		41	8	1026	3630	2455	896		
Peak		6	7	107	196	253	112		
Pass		4	5	3	2	1	[illegible]		

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #223 Arc 10.0 km
14 April 1969 Ref Pt 021°
0715-0749 EST SO$_2$ in pphm

Cum x (m)	Dir (°)	Traverse Height (m)							VIC
		201	313	373	445	511	538	573	
0	356.4		0						0
134	357.2		0						7
268	357.9	0	7						0
402	358.7	•4	7						6
536	359.5	2	6						9
671	000.3	0	6						0
805	001.0		4						4
939	001.8		7						3
1073	002.6		8						4
1207	003.3		5						6
1341	004.1		•5						4
1475	004.9		0						0
1609	005.6			0					0
1743	006.4			20					35
1878	007.2			23					41
2012	007.9			29					52
2146	008.7			43					112
2280	009.5			43					147
2414	010.2			103					182
2548	011.0			89					157
2682	011.8			129					227
2816	012.5			186					328
2950	013.3			179					316
3085	014.1			•171					302
3219	014.9			37					171
3352	015.6			0					0
3487	016.4								0
3621	017.2								0
3755	017.9								0
3889	018.7								0
4023	019.5				0				0
4157	020.2				15				28
4292	021.0				206				383
4426	021.8				•247				462
4560	022.5				198				370
4694	023.3				171				320
4828	024.1				47				38
4962	024.8				0				0
5096	025.6								0
5230	026.4								0
5364	027.1								0
5499	027.9								0
5633	028.7							0	0
5767	029.5							0	0
5901	030.2							0	0
6035	031.0						0	0	0
6169	031.8					0	5	0	4
6303	032.5					18	•6	0	27
6437	033.3					59	4	0	76
6571	034.1					59	0	0	73
6706	034.9					•50		0	63
6840	035.6					32		0	39
6974	036.4					0		0	0
CIC		20	113	4205	3164	776	50	0	
Peak		2	4	193	257	63	11	0	
Pass		7	6	6	1	2	4	3	

Keystone #224 Arc 4.0 km
14 April 1969 Ref Pt 325°
1049-1118 EST SO$_2$ in pphm

Cum y (m)	Dir (°)	Traverse Height (m)									VIC
		453	520	580	640	763	890	1002	1060	1134	
0	298.1				0	0					0
134	300.0				2	4					18
268	301.9				3	5	0				24
402	303.9			0	2	55	11				221
536	305.8			1	3	64	63				427
671	307.7			2	5	49	83				443
805	309.6	0		2	19	44	134				625
939	311.6	0	0	1	•22	65	195				893
1073	313.5	0	4	1	22	•65	•234				1026
1207	315.4	0	•10	3	16	20	148				601
1341	317.3	0	5	2	7	7	73				287
1475	319.2	0	2	•21	2	0	51				206
1609	321.2	0	0	12	0		100	0			339
1743	323.1	0		13	1		6	4			54
1878	325.0			0	1		50	17		0	203
2012	326.9				0		25	6		0	94
2146	328.8						0	2	0	0	5
2280	330.8							30	•8	0	81
2414	332.7							•103	0	0	234
2548	334.6							54		0	122
2682	336.5							37		0	83
2816	338.4							71		0	162
2950	340.4							73		0	166
3085	342.3							12		0	27
3219	344.2							0		0	0
CIC		0	74	218	380	1355	4198	1466	29	0	
Peak		0	11	22	23	90	234	104	9	0	
Pass		9	1	2	3	4	5	6	8	7	

Keystone #225 Arc 4.0 km
15 April 1969 Ref Pt 355°
0655-0712 EST SO$_2$ in pphm

Cum y (m)	Dir (°)	Traverse Height (m)							VIC
		394	418	450	515	577	635	660	
0	326.2	0							0
134	328.1	7							1
268	330.0	•2							1
402	331.9	6							4
536	333.9	0	0		0				0
671	335.8		6		31				58
805	337.7		6	0	43				77
939	339.6		7	8	69				132
1073	341.6		7	6	49				96
1207	343.5		12	29	•308				569
1341	345.4		5	•94	299				636
1475	347.3		•27	55	137				324
1609	349.2		0	69	102	0			263
1743	351.2			43	12	85			212
1878	353.1			0	0	•141			226
2012	355.0					0			0
2146	356.9						0	0	0
2280	358.8						5	0	5
2414	000.8						•21	0	23
2548	002.7						0	0	0
CIC		37	262	1087	3762	808	91	0	
Peak		7	35	98	316	144	22	0	
Pass		2	3	1	4	5	6	7	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #226
15 April 1969
0716-0741 EST

Arc 10.0 km
Ref Pt 352°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 387	419	452	515	568	631	657	VIC
0	334.3	0							0
134	335.1	10	0						9
268	335.9	*9	9						16
402	336.6	12	14						22
536	337.4	7	15	0					19
671	338.2	5	15	14					35
805	338.9	5	24	15					45
939	339.7	0	16	23					44
1073	340.5		8	20					32
1207	341.2		20	42					71
1341	342.0		13	56					83
1475	342.8		31	42					81
1609	343.5		*34	31					70
1743	344.3		7	12					21
1878	345.1		3	10					16
2012	345.9		7	13					22
2146	346.6		24	9					33
2280	347.4		24	10					35
2414	348.2		37	72					125
2548	348.9		0	*74	0				95
2682	349.7			24	7				42
2816	350.5			41	8				65
2950	351.2			0	16				25
3085	352.0				5				7
3219	352.8				4				5
3353	353.5				27				42
3487	354.3				18				27
3621	355.1				1	0			2
3755	355.8				0	16			25
3889	356.6				21	5			40
4023	357.4				62	29			142
4157	358.1				67	*39			163
4292	358.9				*69	30			154
4426	359.7				32	12			67
4560	000.5				15	0			24
4694	001.2				0		0		0
4828	002.0						27	0	32
4962	002.8						19	0	22
5096	003.5						21	0	25
5230	004.3						*37	0	45
5364	005.1						25	0	29
5499	005.8						5	0	6
5633	006.6						0	0	0
CIC		170	1087	1824	1259	470	478	0	
Peak		13	40	80	74	43	43	0	
Pass		2	3	1	4	5	6	7	

Keystone #227
15 April 1969
0746-0827 EST

Arc 16.0 km
Ref Pt 351°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 414	450	475	515	570	596	627	VIC
0	340.0								0
134	340.4	0							0
268	340.9	1							1
402	341.4	5		0					5
536	341.9	8		9					16
671	342.4	5		5					9
805	342.8	4		5	0				7
939	343.3	*6	0	1	5				13
1073	343.8	5	6	0	2				12
1207	344.3	9	9	4	6				27
1341	344.8	9	9	1	15				36
1475	345.2	8	8	8	13				38
1609	345.7	5	11	25	16				56
1743	346.2	2	12	39	16				66
1878	346.7	5	15	30	23				72
2012	347.2	8	11	25	23	0			68
2146	347.6	6	8	29	30	9			85
2280	348.1	7	9	26	61	5			119
2414	348.6	0	9	32	63	9			125
2548	349.1		6	15	80	8			128
2682	349.6		11	32	52	5			108
2816	350.0		16	19	70	2			121

Keystone #227 (continued)

Cum y (m)	Dir (°)	Traverse Height (m) 414	450	475	515	570	596	627	VIC
2950	350.5		14	19	52	6			100
3085	351.0		22	28	48	4			107
3219	351.5		16	29	66	4			126
3353	352.0		*19	12	91	1			142
3487	352.4		20	15	94	0			149
3621	352.9		8	11	114	0			163
3755	353.4		11	19	108	0			162
3889	353.9		0	*86	*96	11	0	0	208
4023	354.4		5	66	55	5	8	0	143
4157	354.8		11	67	29	11	11	0	124
4292	355.3		14	20	0	13	23	0	60
4426	355.8		13	18		*56	22	0	104
4560	356.3		0	18		37	32	0	80
4694	356.8			11		45	*46	0	93
4828	357.2			11		14	9	0	32
4962	357.7			12		34	0	0	47
5096	358.2			9		54			66
5230	358.7			14		0			12
5364	359.2			16					14
5499	359.6			8					7
5633	000.1			25					22
5767	000.6			23					30
5901	001.1			0					0
CIC		331	1049	3000	4402	1187	541	0	
Peak		10	23	100	117	63	48	0	
Pass		7	6	5	1	2	4	3	

Keystone #228
17 April 1969
0657-0724 EST

Arc 4.0 km
Ref Pt 048°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 274	294	374	434	492	557	612	674	734	VIC
0	346.5	0	0								[illegible]
134	348.4	0	1								[illegible]
268	350.4	0	1								[illegible]
402	352.3	0	1								[illegible]
536	354.2	0	3								[illegible]
671	356.1	0	3								[illegible]
805	358.1	0	3								[illegible]
939	360.0	0	*4								[illegible]
1073	001.9	0	3								[illegible]
1207	003.8	0	2								[illegible]
1341	005.7	0	3								[illegible]
1475	007.7	0	3								[illegible]
1609	009.6	0	3								[illegible]
1743	011.5	0	3								[illegible]
1878	013.4	0	3								[illegible]
2012	015.3	0	3								[illegible]
2146	017.3	0	3								[illegible]
2280	019.2	0	3								[illegible]
2414	021.1	0	*4								[illegible]
2548	023.0	0	3								[illegible]
2682	024.9	0	3								[illegible]
2816	026.9	0	3								[illegible]
2950	028.8	0	3								[illegible]
3085	030.7		3								[illegible]
3219	032.6		3								[illegible]
3353	034.6		1		0						[illegible]
3487	036.5		0		18		0				29
3621	038.4			0	66		12				[illegible]
3755	040.3			29	14		[illegible]				58
3889	042.2			*60	*143		34				[illegible]
4023	044.2			11	0		*117				[illegible]
4157	046.1			4			77		0		[illegible]
4292	048.0			0		0	0		12		[illegible]
4426	049.9					29			*121		[illegible]
4560	051.8					109		0	70		[illegible]
4694	053.8					173		115	71		[illegible]
4828	055.7					*89		86	89		[illegible]
4962	057.6					15		78	5	0	[illegible]
5096	059.5					0		107		*1	[illegible]
5230	061.4							*104		0	[illegible]
5364	063.4							0			[illegible]
CIC		0	246	365	982	1469	1066	1861	1254	[illegible]	
Peak		0	4	64	144	173	[illegible]	115	[illegible]	[illegible]	
Pass		9	8	7	6	1	2	3	4	5	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #231
18 April 1969
0641-0700 EST

Arc 4.0 km
Ref Pt 022°
SO_2 in pphm

Cum x (m)	Dir (°)	Traverse Height (m) 250	307	368	430	490	548	608	670	VIC
0	002.0			0						0
118	004.3			2						4
260	006.6			12		0				19
402	008.4	0		*16		16				50
536	010.5	0		15		24				63
671	012.4	0	0	9		28				76
805	014.3	0	0	13	0	*60		0		125
939	016.2	0	2	6	10	44		22		143
1073	018.2	0	7	6	23	24		37		158
1207	020.1	0	*12	0	33	0		31		173
1341	022.0		5		*23		0	0		58
1475	023.9		0		15		52	*23		145
1609	025.8				3		54	42		158
1743	027.8				3		49	10	0	120
1876	029.7				0		*33	0	*12	69
2012	031.6						36		9	72
2146	033.5						0		0	0
CIC		0	337	279	393	737	795	624	74	
Peak		0	12	20	35	64	58	52	14	
Pass		3	7	6	5	4	1	2	3	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #233 Arc 16.0 km
18 April 1969 Ref Pt 022°
0748-0816 EST SO$_2$ in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 107	248	370	490	615	738	VT
0	014.8	0	0					0
134	015.3	0	2					4
268	015.8	0	4					11
402	016.2	0	4					11
536	016.7	0	3					7
671	017.2	0	4					11
805	017.7	0	3					9
939	018.2	0	4					11
1073	018.6	0	*3					7
1207	019.1	0	4					16
1341	019.6	0	3					7
1475	020.1	0	6					15
1609	020.6	0	4					10
1743	021.0	0	*5	0				12
1878	021.5	0	2	1				9
2012	022.0	0	1	3				12
2146	022.5	0	2	2				12
2280	023.0	0	4	2	0			19
2414	023.4	0	3	5	4			27
2548	023.9	0	1	8	4			42
2682	024.4	0	1	10	5			56
2816	024.9	0	2	11	4			66
2950	025.4	0	1	9	11			62
3085	025.8	0	0	5	9			45
3219	026.3			6	12			58
3353	026.8			5	16			70
3487	027.3			4	19			24
3621	027.8			1	15			54
3755	028.2			2	14			54
3889	028.7			4	17	0		70
4023	029.2			5	14	14		102
4157	029.7			7	20	11		128
4292	030.2			2	21	20		143
4426	030.6			1	11	7		45
4560	031.1			1	18	*29		158
4694	031.6			0	20	24		163
4828	032.1			4	16	21		134
4962	032.6			5	31	35	0	160
5096	033.0			9	*36	23	1	229
5230	033.5			1	30	17	1	162
5364	034.0			12	29	17	1	192
5499	034.5			8	27	10	1	155
5633	035.0			*13	10	8	1	80
5767	035.4			14	6		1	27
5901	035.9			8	0		*2	49
6035	036.4			8			9	57
6169	036.9			35			11	84
6303	037.4			32			4	52
6437	037.8			6			2	28
6571	038.3			2			3	13
6706	038.8			0			1	4
6840	039.3						1	6
6974	039.8						1	3
7108	040.2						0	1
CIC		0	250	768	1113	761	175	
Peak		0	5	36	37	20	16	
Pass		6	5	8	3	1	7	

Keystone #235 Arc 10.0 km
29 April 1969 Ref Pt 039°
0657-0719 EST SO$_2$ in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 195	250	326	380	385	440	490	520	555	589	VT
0	026.7			5								[illegible]
134	027.6			6								20
268	028.2	0	0	11								19
402	029.0	5	1	12								19
536	029.8	7	1	11								15
671	030.5	8	5	7								28
805	031.3	6	5	5			0					23
939	032.1	*7	8	15		0	11		0			58
1073	032.9	0	8	11		15	15		4			64
1207	033.6	3	*11	11		21	*29		4			102
1341	034.4	4	2	*14		14	37		*16			125
1475	035.2	2	5	14		15	23		5		0	80
1609	035.9	1	4	1	0	*37	0				0	44
1743	036.7	0	*1	6	*56	30				0	0	93
1878	037.5		8	0	54	25				2	0	93
2012	038.2		3		7	29				*6	0	74
2146	039.0		0		8	32				0	0	33
2280	039.8		0		0	23					0	33
2414	040.5					0		0				0
2548	041.3							*17				29
2682	042.1							12				14
2816	042.8							0				0
CIC		121	247	452	449	847	411	142	41	29	[illegible]	
Peak		70	11	27	66	46	41	30	21	17	[illegible]	
Pass		10	9	8	1	7	2	3	4	5	6	

Keystone #236 Arc 16.0 km
29 April 1969 Ref Pt 042°
0723-0751 EST SO$_2$ in pphm

Cum y (m) Dir (°) Traverse Height (m) 200 250 320 372 439 500 552 634 VT

Keystone #234 Arc 4.5 km
29 April 1969 Ref Pt 033°
0640-0653 EST SO$_2$ in pphm

Cum y (m) Dir (°) Traverse Height (m) [illegible]

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #237 Arc [illegible] km
7 May 1969 Ref Pt [illegible]
[illegible] EST SO_2 in pphm

Cam y (m)	Dir (°)	Traverse Height (m) 247	[illegible]	[illegible]	306	[illegible]	441	[illegible]	528	547	WIC
0	[illegible]	[illegible]	[illegible]								0
134	[illegible]	[illegible]	[illegible]								2
268	[illegible]	[illegible]	[illegible]	[illegible]							2
402	[illegible]	[illegible]	[illegible]	11							16
536	[illegible]	[illegible]	[illegible]	*20		3					28
671	[illegible]	[illegible]	10	15		[illegible]					120
805	[illegible]	[illegible]	1	[illegible]	0	40					136
939	[illegible]	[illegible]	[illegible]		13	*11					235
1073	[illegible]	0	[illegible]		43	12					219
1207	[illegible]		*1		*81	13					125
1341	[illegible]		[illegible]		27	26					117
1475	[illegible]				9	1					13
1609	[illegible]				22	[illegible]					25
1743	[illegible]				21				0		37
1878	[illegible]				[illegible]		[illegible]	0	41		32
2012	[illegible]						42	36	69		168
2146	[illegible]						[illegible]	*191	*[illegible]		587
2280	[illegible]						93	115	130		418
2414	[illegible]						47	[illegible]	107		193
2548	[illegible]						232		22		556
2682	[illegible]						*311		0		696
2816	[illegible]						139				322
2950	[illegible]						43				100
3085	[illegible]						0				0
3219	[illegible]									0	0
3353	[illegible]									*7	7
3487	[illegible]									0	0
CIC		[illegible]	398	340	955	1422	3070	1562	1666	25	
Peak		[illegible]	20	28	132	128	332	199	146	14	
Pass		5	4	3	2	1	6	7	9	8	

Keystone #238 Arc [illegible] km
7 May 1969 Ref Pt 3[illegible]
0622-0643 EST SO_2 in pphm

Cam y (m)	Dir (°)	Traverse Height (m) 247	252	306	368	440	514	540	600	WIC
0	[illegible]		0							0
134	[illegible]		[illegible]							11
268	[illegible]		11							29
402	[illegible]		11							23
536	[illegible]	0	*27	0						31
671	[illegible]	1	14	11						29
805	[illegible]	*[illegible]	25	20						37
939	[illegible]	[illegible]	13	22						63
1073	[illegible]	5	[illegible]	86						60
1207	[illegible]	*[illegible]	[illegible]	41						73
1341	[illegible]	4	11	*75		0				133
1475	[illegible]	[illegible]	[illegible]	26		13				76
1609	[illegible]	[illegible]	[illegible]	20	[illegible]	67				162
1743	[illegible]	0		4	4	63				143
1878	[illegible]			0	6	70				216
2012	[illegible]				16	64				232
2146	[illegible]				76	79				296
2280	[illegible]				*115	*122				390
2414	[illegible]				96	137				439
2548	[illegible]				55	100				302
2682	[illegible]				27	116				240
2816	[illegible]				0	16				166
2950	[illegible]					16				79
3085	[illegible]					16				29
3219	[illegible]					27				55
3353	[illegible]					0				0
3487	[illegible]						0			0
3621	[illegible]						40	0		60
3755	[illegible]						16	2		27
3889	[illegible]						26	55		80
4023	[illegible]						*55	*56		110
4157	[illegible]						37	6		25
4291	[illegible]						23	0	0	40
4425	[illegible]						13		[illegible]	100
4560	[illegible]						0		4	[illegible]
4694	[illegible]								*[illegible]	[illegible]
4828	[illegible]								[illegible]	[illegible]
CIC		96	175	988	1844	1390	942	536	17	
Peak		8	27	86	115	137	55	56	4	
Pass		4	7	6	5	3	1	2	8	

Keystone #239 Arc 16.0 km
7 May 1969 Ref Pt 303°
0640-0714 EST SO_2 in pphm

Cam y (m)	Dir (°)	Traverse Height (m) 247	316	360	430	513	546	WIC
0	281.9	0						0
134	282.3	0						16
268	282.8	2						14
402	283.3	2						5
536	283.8	2						14
671	284.3	2						5
805	284.8	5						9
939	285.2	6						12
1073	285.7	7						14
1207	286.2	6						12
1341	286.7	9						19
1475	287.2	7						14
1609	287.6	*12						23
1743	288.1	9						19
1878	288.6	7						14
2012	289.1	7						14
2146	289.6	9						19
2280	290.0	1						2
2414	290.5	2						5
2548	291.0	6						9
2682	291.5	5						9
2816	292.0	2						4
2950	292.4	0						0
3085	292.9		0					0
3219	293.4		5					7
3353	293.9		6					9
3487	294.4		13					30
3621	294.8		25	0				39
3755	295.3		28	16				70
3889	295.8		29	36				102
4023	296.3		*36	39				117
4157	296.8		36	45				126
4292	297.2		29	35				100
4426	297.7		37	73				95
4560	298.2		14	22				56
4694	298.7		6	34				61
4828	299.2		6	37				66
4962	299.6		6	36				65
5096	300.1		6	37				66
5230	300.6		0	57				57
5364	301.1			46	0			70
5499	301.6			30	12			71
5633	302.0			45	9			87
5767	302.5			50	28			134
5901	303.0			55	22			129
6035	303.5			37	5			67
6169	304.0			46	20			110
6303	304.4			14	37			99
6437	304.9			19	35			100
6571	305.4			46	48			160
6706	305.9			*93	90			325
6840	306.4			75	98			239
6974	306.8			0	*98			201
7108	307.3				95			194
7242	307.8				98			201
7376	308.3				94			192
7510	308.8				66			134
7644	309.2				53	0		106
7779	309.7				49	29		146
7913	310.2				37	*84		206
8047	310.7				19	82		164
8181	311.2				0	48		74
8315	311.6					40		74
8449	312.1					23		36
8583	312.6					6		9
8717	313.1					6		9
8851	313.6					8		13
8985	314.0					6		9
9120	314.5					4		8
9254	315.0					20		37
9388	315.5					12		10
9522	316.0					0		0
9656	316.4						0	0
9790	316.9						*5	1
9924	317.4						1	1
10058	317.9						0	0
CIC		853	1132	2371	3038	1384	25	
Peak		12	28	103	105	87	10	
Pass		4	[illegible]	6	[illegible]	2	3	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #240
2 May 1969
0610-0629 EST

Arc 4.0 km
Ref Pt 041°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 280	309	360	444	520	566	628	683	740	790	VIC
0	016.0	0		0								0
134	017.9	2		8								17
268	019.9	•4		19								37
402	021.8	1		15								28
536	023.7	0		26								46
671	025.6		0	5	0							5
805	027.6		1	2	15	0						39
939	029.5		•5	8	•103	15						265
1073	031.4		2	48	105	103						482
1207	033.3		2	•75	73	197		0				614
1341	035.2		0	0	124	•277		22				751
1475	037.2				79	0		79				290
1609	039.1				110	11		•245				635
1743	041.0				16	0	0	189				330
1878	042.9				0		45	161				315
2012	044.8						177	128			0	455
2146	046.8						240	0		0	0	346
2280	048.7						•261			8	0	389
2414	050.6						193		0	0	0	279
2548	052.5						32		89	•21	0	209
2682	054.4						0		•136	0	0	203
2816	056.4								139		0	209
2950	058.3								76			114
3085	060.2								40			60
3219	062.1								0			0
CIC		25	41	738	2241	2157	3395	2946	1720	104	0	
Peak		4	9	83	125	282	274	268	163	29	0	
Pass		10	9	8	1	2	3	4	5	6	7	

Keystone #241
2 May 1969
0634-0709 EST

Arc 10.0 km
Ref Pt 041°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 346	380	455	516	565	625	680	740	804	VIC
0	025.6		0								0
134	026.4	0	1								1
268	027.2	1	1								3
402	027.9	1	3								11
536	028.7	6	9								19
671	029.5	7	3								17
805	030.2	•5	8								16
939	031.0	4	•9								17
1073	031.8	0	5								7
1207	032.5		1								2
1341	033.3		0								0
1475	034.1										0
1609	034.9										0
1743	035.6										0
1878	036.4										0
2012	037.2										0
2146	037.9			0							0
2280	038.7			8							15
2414	039.5			39							70
2548	040.2			46							87
2682	041.0			79							143
2816	041.8			90							164
2950	042.5			•81							147
3085	043.3			73							132
3219	044.1			75							136
3353	044.8			13							23
3487	045.6			0							0
3621	046.4										0
3755	047.1										0
3889	047.9				0						0
4023	048.7				42	0					62
4157	049.5				76	5					118
4292	050.2				88	4					132
4426	051.0				•80	30					161
4560	051.8				45	41					129
4694	052.5				25	82					129
4828	053.3				39	73					186

Keystone #241 (continued)

Cum y (m)	Dir (°)	Traverse Height (m) 345	380	455	516	565	625	680	740	804	VIC
4962	054.1				17	•133					218
5096	054.8				9	112	0				177
5230	055.6				0	99	19				172
5364	056.4					21	42				96
5499	057.1					8	92				153
5633	057.9					28	•109				208
5767	058.7					0	107				165
5901	059.4						99	0			150
6035	060.2						39	1			62
6169	061.0						6	15			47
6303	061.7						2	60			96
6437	062.5						0	96			147
6571	063.3							130			199
6706	064.1							153			246
6840	064.8							194			297
6974	065.6							•190			292
7108	066.4							71			109
7242	067.1							28			44
7376	067.9							46		0	74
7510	068.7							33	7	0	51
7644	069.4							15	4	1	30
7778	070.2							0	9	0	15
7913	071.0								13	0	22
8047	071.7								13	0	22
8181	072.5								9	0	15
8315	073.3								16	0	26
8449	074.0								23	0	39
8583	074.8								[illegible]	0	104
8717	075.6								[illegible]	0	136
8851	076.3								•[illegible]	0	154
8985	077.1								[illegible]	0	124
9120	077.9								[illegible]	0	[illegible]
9254	078.7								[illegible]	0	[illegible]
9388	079.4								[illegible]		[illegible]
CIC		83	170	1168	1100	2223	5040	3741	3146	[illegible]	
Peak		9	14	85	97	140	172	203	104	[illegible]	
Pass		3	2	1	4	5	7	6	8	9	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #242
3 May 1969
[illegible] LST

Arc [illegible] km
Ref Pt [illegible]
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 377	500	625	739	VIC
0	038.3	0				0
134	038.8	3				31
268	039.3	14				47
402	039.8	*14				35
536	040.2	12				40
671	040.7	10				34
805	041.2	4				14
939	041.7	2				6
1073	042.2	0				0
1207	042.6					0
1341	043.1					0
1475	043.6					0
1609	044.1		0			0
1743	044.6		2			16
1878	045.0		4			14
2012	045.5		6			19
2146	046.0		5			17
2280	046.5		4			15
2414	047.0		6			20
2548	047.4		4			13
2682	047.9		6			20
2816	048.4		10			32
2950	048.9		9			29
3085	049.4		11			38
3219	049.8		32			107
3353	050.3		49			162
3487	050.8		66			219
3621	051.3		71			236
3755	051.8		*69			227
3889	052.2		18			60
4023	052.7		4			15
4157	053.2		4			15
4292	053.7		5			17
4426	054.2		5			16
4560	054.6		4			11
4694	055.1		3			11
4829	055.6		3	0		11
4962	056.1		3	6		36
5096	056.6		9	8		55
5230	057.0		3	12		49
5364	057.5		5	7		40
5499	058.0		6	13		67
5633	058.5		6	6		38
5767	059.0		3	5		33
5901	059.4		4	9		43
6035	059.9		6	15		68
6169	060.4		7	20		87
6303	060.9		8	24		104
6437	061.4		12	28		131
6571	061.8		14	57		227
6706	062.3		13	109		391
6840	062.8		13	121		419
6974	063.3		[illegible]	104		361
7108	063.8		[illegible]	*134		452
7242	064.2		6	57		201
7376	064.7		8	14		[illegible]
7510	065.2		[illegible]	13		74
7644	065.7		17	40		164
7778	066.2		[illegible]	27		[illegible]
7913	066.6		9	12		[illegible]
8047	067.1		10	0		34
8181	067.6		6			19
8315	068.1		8			26
8449	068.6		7			26
8583	069.1		[illegible]			13
8717	069.5		6			21
8851	070.0		6			20
8985	070.5		6			20
9120	071.0		6			21
9254	071.4		5			17
9388	071.9		4			14
9522	072.4		1			9
9656	072.9		[illegible]			7
9790	073.4		[illegible]		0	3
9924	073.9		[illegible]		3	12
10058	074.3		[illegible]		3	25
10192	074.8		[illegible]		*5	34
10327	075.3		[illegible]		0	9
10461	075.8		[illegible]			6
10595	076.3		[illegible]			4
10729	076.7		[illegible]			0
CIC		188	[illegible]	1075	20	
Peak		[illegible]	[illegible]	134	[illegible]	
Pass		1	[illegible]	[illegible]	[illegible]	

Keystone #243
3 May 1969
0558-0610 LST

Arc 4.0 km
Ref Pt 085°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 254	282	316	373	439	503	535	VIC
0	061.9	0							0
134	063.9	*7							5
268	065.8	0	0	0	0				0
402	067.7		8	7	5				23
536	069.6		31	20	21				85
671	071.6		*31	40	61				175
805	073.5		25	40	78				197
939	075.4		6	11	76				142
1073	077.3		0	5	78				134
1207	079.2			17	*72				138
1341	081.2			*59	90				219
1475	083.1			24	17			0	56
1609	085.0			6	0	0	0	0	7
1743	086.9			0		139	14	0	259
1878	088.8					173	*98	0	426
2012	090.8					*274	108	0	614
2146	092.7					254	0	0	441
2280	094.6					60		0	104
2414	096.5					15		0	26
2548	098.4					0			0
CIC		25	359	815	1779	3282	787	0	
Peak		11	40	68	117	292	177	0	
Pass		6	7	5	4	3	1	2	

Keystone #244
3 May 1969
0615-0638 EST

Arc 10.0 km
Ref Pt 084°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 282	314	394	454	479	519	VIC
0	064.8		0					0
134	065.6	0	8					12
268	066.3	2	7					13
402	067.1	7	11					22
536	067.9	5	17					29
671	068.6	2	*18					28
805	069.4	*7	9					20
939	070.2	8	15					30
1073	070.9	1	17					26
1207	071.7	1	17					26
1341	072.5	0	19					28
1475	073.2		9					14
1609	074.0		4					5
1743	074.8		5					7
1878	075.5		6					9
2012	076.3		9					14
2146	077.1		4	0				5
2280	077.9		2	12				26
2414	078.6		5	17				35
2548	079.4		6	13				33
2682	080.2		0	11				20
2816	080.9			14			0	26
2950	081.7			17	0	0	0	31
3085	082.5			24	19	7	0	72
3219	083.2			20	28	0	0	87
3353	084.0			46	34	11	0	134
3487	084.8			*63	27	0	0	148
3621	085.5			48	35	0	0	130
3755	086.3			38	53	4	0	134
3889	087.1			33	57	0	0	127
4023	087.8			45	52	0	0	142
4157	088.6			57	74	0	0	190
4292	089.4			42	76	11	0	175
4426	090.1			39	87	34	0	201
4560	090.9			54	*91	52	0	250
4694	091.7			37	57	35	0	164
4829	092.5			12	25	54	0	97
4962	093.2			3	6	60	0	63
5096	094.0			0	0	*59	0	53
5230	094.8					39	0	34
5364	095.5					41	0	36
5499	096.3					22	0	25
5633	097.1					11	0	9
5767	097.8					32	0	17
5901	098.6					22	0	19
6035	099.4					0	0	0
CIC		122	842	2303	2689	1762	0	
Peak		11	30	71	96	69	0	
Pass		6	5	4	5	3	0	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #245
3 May 1969
0702-0740 EST

Arc 16.0 km
Ref Pt 083°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 317	387	452	522	566	629	707	VIC
0	068.6	0							0
134	069.1	2							3
268	069.6	3							7
402	070.0	4							7
536	070.5	3							7
671	071.0	4							7
805	071.5	4							8
939	072.0	5							10
1073	072.4	5							10
1207	072.9	5							9
1341	073.4	5							10
1475	073.9	4							8
1609	074.4	3							6
1743	074.8	3							6
1878	075.3	3							6
2012	075.8	3							7
2146	076.3	3							6
2280	076.8	3	0						6
2414	077.2	2	1	0					7
2548	077.7	1	4	1					12
2682	078.2	2	5	3					19
2816	078.7	2	5	2					16
2950	079.2	2	4	7					23
3085	079.6	3	5	16					43
3219	080.1	2	7	15					44
3353	080.6	1	7	13					39
3487	081.1	3	6	8					30
3621	081.6	2	11	8					38
3755	082.0	*5	12	11					51
3889	082.5	5	11	11					50
4023	083.0	5	8	15					53
4157	083.5	1	9	14					36
4292	084.0	1	6	18					46
4426	084.4	1	5	21					49
4560	084.9	0	6	19					46
4694	085.4	0	8	14					41
4828	085.9	1	7	10					32
4962	086.4	2	[illegible]	10					37
5096	086.8	0	13	9					41
5230	087.3	1	19	15					42
5364	087.8	0	16	22					72
5499	088.3		16	19					70
5633	088.8		17	23					71
5767	089.2		*19	24					78
5901	089.7		17	19					65
6035	090.2		17	13					44
6169	090.7		11	9	0				26
6303	091.2		8	9	4				41
6437	091.6		7	12	4				41
6571	092.1		7	12	4				41
6706	092.6		5	7	6	0			32
6840	093.1		8	16	7	1			57
6974	093.6		4	24	9	2			69
7108	094.0		5	15	9	3			65
7242	094.5		2	13	6	4			42
7376	095.0		1	26	2	1			53
7510	095.5		0	*23	1	2			47
7644	096.0			18	0	3			38
7778	096.4			10	1	1			20
7913	096.9			5	12	1			30
8047	097.4			4	8	1			25
8181	097.9			5	3	2			36
8315	098.4			4	0	3			6
8449	098.8			3	0	9			7
8583	099.3			5	3	8			13
8717	099.8			4	4	1			16
8851	100.3			4	9	2			23
8985	100.8			3	15	6			33
9120	101.2			3	23	1			43
9254	101.7			3	19	1			30
9388	102.2			3	32	1	0	0	41
9522	102.7			3	*30	[illegible]	[illegible]	[illegible]	62
9656	103.2			2	8	[illegible]	[illegible]	[illegible]	19
9790	103.6			1	6	[illegible]	[illegible]	[illegible]	28
9924	104.1			0	4	[illegible]	[illegible]	[illegible]	29
10059	104.6				[illegible]	[illegible]	[illegible]	[illegible]	24
10193	105.1				[illegible]	[illegible]	[illegible]	[illegible]	18
10327	105.6				[illegible]	[illegible]	[illegible]	[illegible]	21
10461	106.1				[illegible]	[illegible]	[illegible]	[illegible]	40
10595	106.5				[illegible]	[illegible]	[illegible]	[illegible]	19
10729	107.0				[illegible]	[illegible]	[illegible]	[illegible]	38
10863	107.5				[illegible]	[illegible]	[illegible]	[illegible]	20
10997	108.0				[illegible]	[illegible]	[illegible]	[illegible]	24
11131	108.5					[illegible]	[illegible]	[illegible]	13
11265	108.9					[illegible]	[illegible]	[illegible]	40
11399	109.4					[illegible]	[illegible]		30
11533	109.9					[illegible]			41
11667	110.4					[illegible]			42

Keystone #245 (continued)

Cum y (m)	Dir (°)	Traverse Height (m) 317	387	452	522	566	629	707	VIC
11802	110.9					27			35
11936	111.3					10			15
12070	111.8					16			22
12204	112.3					8			15
12338	112.8					6			9
12472	113.3					3			4
12606	113.7					4			6
12741	114.2					0			0
CIC		305	1100	2173	848	1234	415	[illegible]	
Peak		6	21	27	25	35	17	[illegible]	
Pass		4	1	2	1	5	6	7	

Keystone #246
5 May 1969
0606-0620 EST

Arc 4.0 km
Ref Pt 266°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 157	196	260	302	366	440	479	[illegible]	VIC
0	252.6							0	0	0
134	254.5						0	0	*6	4
268	256.4						14	16	0	34
402	258.3	0	0				46	37	0	100
536	260.2	0	2				87	49	4	174
671	262.2	0	*5		0		*91	36	0	174
805	264.1	0	5		105		42	41		213
939	266.0	0	0	0	302		42	48		530
1073	267.9			16	*162	0	13	*80		347
1207	269.8			71	0	102	0	62		340
1341	271.8			*90		211		46		354
1475	273.7			34		*382		22		720
1609	275.6			0		342		17		636
1743	277.5					59		0		409
1878	279.4					0				0
CIC		6	41	759	2039	3924	1021	1624	35	
Peak		0	13	100	328	396	96	88	6	
Pass		6	5	4	3	2	1	0	7	

Keystone #247
5 May 1969
0823-0839 EST

Arc 10.0 km
Ref Pt 265°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) [illegible]	235	257	329	380	454	VIC
0	[illegible]					0	0	0
134	[illegible]					2	0	4
268	[illegible]					4	0	9
402	[illegible]					15	0	24
536	[illegible]					16	0	28
671	[illegible]					14	0	24
805	[illegible]					13	0	22
939	[illegible]					14	0	24
1073	[illegible]					14	0	24
1207	[illegible]	0				4	0	6
1341	[illegible]	0	0			7	0	11
1475	[illegible]	0	6			6	0	18
1609	[illegible]	0	9			8	0	11
1743	[illegible]	0	18			9	0	17
1878	[illegible]	0	5			7	0	8
2012	[illegible]	0	[illegible]		0	14	0	48
2146	[illegible]	0	47		11	18	0	79
2280	[illegible]	0	100		11	83	0	167
2414	[illegible]	0	*112		88	38	0	[illegible]
[illegible]	[illegible]	[illegible]	47	0	143	[illegible]	0	[illegible]
[illegible]	[illegible]	[illegible]	13	12	192	*77	0	[illegible]
[illegible]	[illegible]		[illegible]	[illegible]	*[illegible]	88	[illegible]	[illegible]
[illegible]	[illegible]			*[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]			[illegible]	124	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]			[illegible]	40	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]			[illegible]	[illegible]		[illegible]	[illegible]
[illegible]	[illegible]			[illegible]				[illegible]
[illegible]	[illegible]			[illegible]				[illegible]
[illegible]	[illegible]			[illegible]				[illegible]
[illegible]	[illegible]			[illegible]				
CIC		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Peak		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Pass		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #248
6 May 1969
0644-0701 EST

Arc 16.0 km
Ref Pt 266°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 250	295	320	387	446	VIC
0	253.0					0	0
134	253.5					3	15
268	254.0					11	12
402	254.5					11	17
536	255.0					9	15
671	255.4					12	19
805	255.9					13	21
939	256.4					12	19
1073	256.9					15	25
1207	257.4					14	23
1341	257.8					16	26
1475	258.3					4	6
1609	258.8		0			16	27
1743	259.3	0	4			11	20
1878	259.8	0	7			13	28
2012	260.2	0	1			14	29
2146	260.7	0	[illegible]			13	21
2280	261.2	0	1			2	13
2414	261.7	0	15			2	16
2548	262.2	0	21			0	22
2682	262.6	0	29			0	27
2816	263.1	0	36			5	42
2950	263.6	0	37			1	74
3085	264.1	0	•61			6	65
3219	264.6	0	0			0	0
3353	265.0					6	10
3487	265.5					3	4
3621	266.0				0	5	8
3755	266.5				4	13	27
3889	267.0				13	2	26
4023	267.4				9	1	18
4157	267.9			0	14	7	35
4292	268.4			9	16	21	74
4426	268.9			6	27	•49	133
4560	269.4			18	11	23	78
4694	269.8			52	2	0	67
4828	270.3			75	0		92
4962	270.8			102	5		133
5096	271.3			•136	93		325
5230	271.8			77	73		219
5364	272.2			6	39		73
5499	272.7			9	32		66
5633	273.2			0	48		82
5767	273.7				76		130
5901	274.2				84		144
6035	274.6				96		164
6169	275.1				•134		128
6303	275.6				47		80
6437	276.1				0		0
CIC		0	935	1754	2942	1221	
Peak		0	82	145	165	50	
Pass		4	5	1	2	3	

Keystone #249
6 May 1969
0558-0628 EST

Arc 4.0 km
Ref Pt 238°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 190	263	329	358	382	450	510	575	640	657	702	VIC
0	195.7									0			0
134	197.7									16		0	18
268	199.6									22	0	0	24
402	201.5									•36	6	0	44
536	203.4									34	13	0	48
671	205.3									26	20	0	44
805	207.3									14	•49	0	56
939	209.2									30	43	0	69
1073	211.1									17	2	0	21
1207	213.0									•22	1	0	25
1341	214.9								0	0	0	0	0
1475	216.9							0	49				85
1609	218.8							16	24				70
1743	220.7							13	10				40
1878	222.6							22	33				93
2012	224.6							16	91				185
2146	226.5							24	77				174
2280	228.4							42	95				235
2414	230.3							78	105				312
2548	232.2							56	•112				287
2682	234.2							128	84				359
2816	236.1							113	24				231
2950	238.0					0		•226	0				377
3085	239.9					6		91					159
3219	241.8					0		20					33
3353	243.8					0	0	0					0
3487	245.7					0	35						60
3621	247.6					0	15						26
3755	249.5					0	•61						104
3889	251.4					0	26						44
4023	253.4					0	26						44
4157	255.3					2	21						39
4292	257.2					•26	61						136
4426	259.1					8	67						124
4560	261.1				0	0	68						116
4694	263.0			0	12		22						46
4828	264.9			40	22		22						104
4962	266.9			•74	7		0						99
5096	268.7			40	5								54
5230	270.7			68	•29								107
5364	272.6			35	45								76
5499	274.5	0	0	71	18								103
5633	276.4	0	•63	67	0								202
5767	278.3	0	37	7									79
5901	280.3	0	40	0									74
6035	282.2	0	5										9
6169	284.1	0	11										20
6303	286.0	0	0										0
CIC		0	558	1439	491	151	1519	3024	2520	779	479	0	
Peak		0	64	84	52	36	79	313	131	36	54	0	
Pass		11	10	9	8	7	6	1	2	3	5	4	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #250
6 May 1969
0632-0716 EST

Arc 10.0 km
Ref Pt 241°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)							VIC
		320	391	450	526	570	620	690	
0	195.7						0	0	0
134	196.4						13	0	21
268	197.2						26	0	41
402	198.0						30	0	49
536	198.7						46	0	73
671	199.5						59	0	94
805	200.3						73	0	116
939	201.0						33	0	53
1073	201.8						55	0	88
1207	202.6						49	0	79
1341	203.3						40	0	64
1475	204.1						25	0	39
1609	204.9						15	0	24
1743	205.7						7	0	11
1878	206.4						16	0	26
2012	207.2					0	14	0	23
2146	208.0					11	12	0	32
2280	208.7					2	1	0	5
2414	209.5					11	1	0	15
2548	210.3					35	0	0	44
2682	211.0					33	0	0	41
2816	211.8					61	0	0	76
2950	212.6					59	11	0	90
3085	213.3					75	28	0	139
3219	214.1					90	47	0	188
3353	214.9					93	69	0	227
3487	215.6					91	*69	0	226
3621	216.4					84	28	0	151
3755	217.2					*107	11	0	151
3889	217.9					112	6	0	151
4023	218.7					82	6	0	112
4157	219.5					57	4	0	78
4292	220.3				0	57	0	0	72
4426	221.0				8	34			56
4560	221.8				43	75			164
4694	222.6				148	75			331
4829	223.3				*153	91			361
4962	224.1				118	66			272
5096	224.9				90	89			256
5230	225.6				90	62			223
5364	226.4				66	40			155
5499	227.2				47	14			93
5633	227.9				46	16			94
5767	228.7				25	0			39
5901	229.5				23				38
6035	230.2				4				6
6169	231.0				0				0
6303	231.8				1				2
6437	232.5				0				0
6571	233.3				0				0
6706	234.1				0				0
6840	234.9				1				2
6974	235.6				6				9
7108	236.4				13				21
7242	237.2				29				47
7376	237.9				43				69
7510	238.7				11				17
7644	239.5				0				0
7778	240.2								0
7913	241.0			0					0
8047	241.8			9					17
8181	242.5			4					6
8315	243.3			1					2
8449	244.1			1					2
8583	244.8			1					2
8717	245.6			13					23
8851	246.4			55					93
8985	247.1			87					156
9120	247.9			*114					205
9254	248.7			117					211
9388	249.5			111					201
9522	250.2			96					154
9656	251.0			36					45
9790	251.8			64					116
9924	252.5			75					135
10058	253.3			68					123
10192	254.1			76					133
10327	254.8			79					142
10461	255.6			70					127
10595	256.4		0	69					125
10729	257.1		18	59					136
10863	257.9		15	30					81
10997	258.7		21	26					63
11131	259.4		12	14					46
11265	260.2		19	6					43
11399	261.0		21	2					41
11534	261.7		28	5					57
11668	262.5	0	25	0					43
11802	263.3	8	28						64
11936	264.1	19	*40						102
12070	264.8	*21	30						93
12204	265.6	8	13						38
12338	266.4	6	13						33
12472	267.1	0	8						14
12606	267.9	9	0						16
12741	268.7	14							27
12875	269.4	0							0
CIC		302	1040	4570	3458	5612	2837	0	
Peak		23	41	122	171	116	82	0	
Pass		3	2	1	4	5	6	7	

Keystone #251
7 May 1969
0602-0619 EST

Arc 4.0 km
Ref Pt 016°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)								VIC
		194	255	331	375	455	505	534	570	
0	349.1	0	0							0
134	351.0	0	7							13
268	352.9	0	12							21
402	354.9	0	14							26
536	356.8	0	9							17
671	358.7	0	15		0					29
805	000.6	0	15		20					61
939	002.6	0	6		23					49
1073	004.5	0	*11		26					62
1207	006.4	0	5	0	35					66
1341	008.3	0	0	24	64	0				145
1475	010.2			33	133	8				206
1609	012.2			38	102	13				253
1743	014.1			*44	*123	51				364
1878	016.0			35	0	51				145
2012	017.9			6		156	0			280
2146	019.8			20		157	152	0	0	465
2280	021.8			0		*315	299	54	0	909
2414	023.7					364	239	88	0	961
2548	025.6					33	*272	68	0	403
2682	027.5					0	90	*196	0	265
2816	029.4						0	241	0	209
2950	031.4							302	0	282
3085	033.3							272	0	236
3219	035.2							20	0	17
3353	037.1							0	0	0
CIC		0	335	716	1883	4112	3769	4444	0	
Peak		0	18	48	138	388	349	365	0	
Pass		5	4	3	2	1	6	8	7	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #252 Arc 10.0 km
7 May 1969 Ref Pt 018
0623-0641 EST SO2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 256	320	367	389	440	510	VIC
0	350.3	0						0
134	351.1	1						2
268	351.9	2						4
402	352.6	1						2
536	353.4	*6						10
671	354.2	1						2
805	354.9	5						0
939	355.7	0						0
1073	356.5	*2						4
1207	357.3	1						2
1341	358.0	2						4
1475	358.8	*6						10
1609	359.6	0						0
1743	000.3							0
1878	001.1							0
2012	001.9							0
2146	002.6							0
2280	003.4							0
2414	004.2		0					0
2548	004.9		4					5
2682	004.7		8					12
2816	006.5		*7					10
2950	007.2		13					19
3085	008.0		12		0			17
3219	008.8		5		6			13
3353	009.5		0		12	0		11
3487	010.3				19	6		28
3621	011.1				19	13		39
3755	011.9				18	9		32
3889	012.6				22	15		61
4023	013.4				23	27		66
4157	014.2				26	27		61
4292	014.9				22	21		56
4426	015.7				14	46		88
4560	016.5				23	49		102
4694	017.2				*32	57		124
4828	018.0				16	70	0	130
4962	018.8				2	*87	35	208
5096	019.5				14	40	81	242
5230	020.3				0	6	142	276
5364	021.1					35	175	383
5499	021.8					19	226	453
5633	022.6					29	253	521
5767	023.4			0		13	247	483
5901	024.1			*7		0	*260	493
6035	024.9			4			42	157
6169	025.7			0			0	0
CIC		97	172	37	461	2070	5376	
Peak		6	16	12	37	89	307	
Pass		5	6	2	4	1	1	

Keystone #253 Arc 16.0 km
7 May 1969 Ref Pt 009
0645-0701 EST SO2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 315	387	448	510	VIC
0	357.5			0		0
134	358.0			9		15
268	358.4			14		23
402	358.9			14		23
536	359.4			8		13
671	359.9			9		15
805	000.4			9		15
939	000.8			13		21
1073	001.3			11		17
1207	001.8			5		8
1341	002.3	0	0	5		8
1475	002.8	0	7	5		20
1609	003.2	0	8	9		30
1743	003.7	0	11	20		51
1878	004.2	0	7	22		49
2012	004.7	0	7	30		63
2146	005.2	0	7	19		43
2280	005.6	0	7	13		34
2414	006.1	0	12	22		57
2548	006.6	0	*18	16		58
2682	007.1	0	11	12		38
2816	007.6	0	8	11		32
2950	008.0	0	7	8		26
3085	008.5	0	13	14		46
3219	009.0	0	8	20	0	47
3353	009.5	0	0	33	7	66
3487	010.0			23	0	38
3621	010.4			25	7	52
3755	010.9			30	1	52
3889	011.4			32	0	52
4023	011.9			26	0	42
4157	012.4			18	2	33
4292	012.8			*14	7	35
4426	013.3			6	32	62
4560	013.8			6	42	79
4694	014.3			8	60	112
4828	014.8			6	89	157
4962	015.2			5	60	107
5096	015.7			5	47	85
5230	016.2			5	118	204
5364	016.7			9	63	120
5499	017.2			8	37	76
5633	017.6			0	57	95
5767	018.1				103	171
5901	018.6				33	54
6035	019.1				83	139
6169	019.6				*128	211
6303	020.0				102	169
6437	020.5				28	47
6571	021.0				13	21
6706	021.5				16	27
6840	022.0				28	47
6974	022.4				5	8
7108	022.9				5	8
7242	023.4				7	12
7376	023.9				8	14
7510	024.4				7	12
7644	024.8				0	0
CIC		0	465	2064	4285	
Peak		0	18	35	128	
Pass		4	3	2	1	

Keystone #254 Arc 4.0 km
8 May 1969 Ref Pt 011
[illegible]-0613 EST SO2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 115	240	306	377	435	500	560	589	VIC
0	347.9		0							0
134	349.9	0	13							75
268	351.8	8	9	8	15					68
402	353.7	*9	6	15	22					90
536	355.6	5	*11	22	24					99
671	357.6	2	13	49	30					156
805	359.5	3	2	57	*76					244
939	001.4	0		*69	10		0			209
1073	003.3			33	0	0	41			124
1207	005.2			0		58	*124		2	296
1341	007.2					93	135		0	378
1475	009.1					*177	91		0	442
1609	011.0					90	0		0	347
1743	012.9					21		0	0	38
1878	014.8					0		*326	0	530
2012	016.8							25	0	25
2146	018.7							0		0
CIC		28	[illegible]	1[illegible]4	232	1554	1299	964	0	
Peak		11	13	69	45	168	168	136	0	
Pass		6	5	4	5	1	2	1	4	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #255
8 May 1969
0618-0640 LST

Arc 10.0 km
Ref Pt 012°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)								VIC
		245	268	320	384	440	500	560	620	
0	352.0		0							0
134	352.8		9							9
268	353.6		7							7
402	354.3		6							6
536	355.1		7							7
671	355.9	0	12							12
805	356.6	5	*7	0						10
939	357.4	2	8	6	0					19
1073	358.2	7	2	11	8					36
1207	358.9	0	0	13	13					41
1341	359.7	1		20	12					50
1475	000.5	7		*16	23					67
1609	001.2	*12		22	26					83
1743	002.0	0		4	34					60
1878	002.8			0	28					45
2012	003.5				28					45
2146	004.3				28					45
2280	005.1				*26					41
2414	005.9				28					45
2548	006.6				15	0				24
2682	007.4				15	4				30
2816	008.2				0	11				16
2950	008.9				0	15				24
3085	009.7				0	29				45
3219	010.5				0	26				40
3353	011.2				6	27	0			51
3487	012.0				0	20	26			72
3621	012.8					14	35			78
3755	013.5					21	18			61
3889	014.[illegible]					25	7			49
4023	015.1					36	20			88
4157	015.8					18	29			74
4292	016.6					42	40			129
4426	017.4					*47	*60			182
4560	018.1					14	54			108
4694	018.9					35	31	0		103
4828	019.7					28	22	29		126
4962	020.5					2	32	*30		103
5096	021.2					6	22	18		73
5230	022.0					16	0	22		61
5364	022.8					0		8		13
5499	023.5							23		38
5633	024.3							22	0	36
5767	025.1							0	14	23
5901	025.8								7	11
6035	026.6								7	11
6169	027.4								4	6
6303	028.1								27	43
6437	028.9								*19	30
6571	029.7								0	0
CIC		121	205	327	1038	1561	1443	549	277	
Peak		12	13	23	40	52	69	42	30	
Pass		4	3	2	1	5	6	7	8	

Keystone #256
9 October 1969
0652-0709 LST

Arc 4.0 km
Ref Pt 049°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)								VIC
		245	301	360	432	500	550	580	605	
0	029.8	0	0							0
134	031.7	0	12							18
268	033.6	0	*40							62
402	035.6	0	28	0						42
536	037.5	0	0	7						12
671	039.4	0		10						18
805	041.3			23						40
939	043.2			26						44
1073	045.2			54						46
1207	047.1			*75						131
1341	049.0			12		0				20
1475	050.9			0		21				31
1609	052.8				0	43				66
1743	054.8				25	*103				112
1878	056.7				16	34				93
2012	058.6				23	0	0			43
2146	060.5				*36		*47	0	0	120
2280	062.4				16		27	*2	5	64
2414	064.4				0		0	0	*1	2
2548	066.3								0	0
CIC		0	287	751	423	723	266	12	20	
Peak		0	43	81	46	115	53	5	8	
Pass		8	7	1	2	3	4	6	5	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #25[illegible] Arc [illegible] km
[illegible] October 1969 Ref Pt [illegible]
[illegible] EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 341	[illegible]	359	433	480	545	600	[illegible]	VIC
0	[illegible]									0
134	[illegible]			[illegible]						2
268	[illegible]			3						6
402	[illegible]		1	3						6
536	[illegible]		1	4						9
671	[illegible]		[illegible]	6						17
805	[illegible]		4	15						24
939	040.9		•17	9						43
1073	041.7		1[illegible]	6						26
1207	042.5		14	8						28
1341	043.[illegible]		11	[illegible]						37
1475	044.[illegible]	0	[illegible]	1[illegible]						24
1609	044.[illegible]	1	3	16						34
1743	045.[illegible]	1	[illegible]	16						37
1878	046.3	3	[illegible]	14						38
2012	047.1	3	1	16						39
2146	047.9	•[illegible]	[illegible]	•17	0					43
2280	048.6	4	7	15	2					36
2414	049.4	[illegible]	[illegible]	4	3	0				21
2548	050.2	[illegible]	[illegible]	0	2	[illegible]				24
2682	050.[illegible]	3	[illegible]		8	0				30
2816	051.7	0	[illegible]		11	1				25
2950	052.5		[illegible]		12	1				27
3085	053.2		1		7	2			0	17
3219	054.0		0		15	[illegible]			[illegible]	29
3353	054.8				23	9			0	54
3487	055.5				27	•15			0	69
3621	056.3				•36	16		0	0	87
3755	057.1				38	14		1	0	89
3889	057.8				20	15	0	0	0	57
4023	058.6				9	16	[illegible]	1	0	48
4157	059.4				5	14	8	•7	0	53
4292	060.1				7	[illegible]	0	8	0	30
4426	060.9				8	[illegible]	5	3	0	32
4560	061.7				4	0	2	1	0	19
4694	062.5				2	0	7	8	0	15
4828	063.2				2		•10		0	20
4962	064.0				2		7		0	6
5096	064.8				1		3		0	7
5230	065.5				0		1		0	4
5364	066.3						[illegible]			2
5499	067.1						0			0
CIC		31	41[illegible]	349	883	476	176	70	0	
Peak		4	19	19	42	21	13	11	0	
Pass		3	2	1	4	[illegible]	[illegible]	2	0	

Keystone #259 Arc 4.0 km
10 October 1969 Ref Pt 024
0650-0702 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 250	307	373	438	470	506	VIC
0	004.8		0					0
134	006.7		15					25
268	008.6		24					40
402	010.6	0	34					40
536	012.5	8	33					65
671	014.4	7	40					92
805	016.3	•6	•70					124
939	018.2	7	17					39
1073	020.2	0	0					0
1207	022.1			2			0	2
1341	024.0			9	0	4	0	14
1475	025.9			21	8	14	0	145
1609	027.8			90	10	•73	0	231
1743	029.8			•144	43	6	0	308
1878	031.7			90	•45		0	190
2012	033.6			32	40		0	73
2146	035.5			0	0			0
CIC		139	342	1414	521	204	0	
Peak		14	72	144	61	73	0	
Pass		9	7	4	2	3	1	

Keystone #258 Arc 16.0 km
9 October 1969 Ref Pt 058
0754-0820 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 302	353	428	493	545	605	VIC
0	038.3		0					0
134	038.8		1					2
268	039.3		2					3
402	039.8		1					2
536	040.2		2					3
671	040.7		2					3
805	041.2		3					6
939	041.7		4					7
1073	042.2	0	4					7
1207	042.6	5	9					21
1341	043.1	4	8					19
1475	043.6	•4	10					24
1609	044.1	4	15					30
1743	044.6	0	•14					24
1878	045.0		13					22
2012	045.5		5					9
2146	046.0		4					7
2280	046.5		1					2
2414	047.0		2					3
2548	047.4		1					2
2682	047.9		1					1
2816	048.4		1					2
2950	048.9		3	0				5
3085	049.4		1	1				4
3219	049.8		1	4	0			10
3353	050.3		1	6	1			16
3487	050.8		1	8	1			17
3621	051.3		1	8	1			18
3755	051.8		0	10	3			24
3889	052.2			17	7			42
4023	052.7			19	3			41
4157	053.2			•20	5			46
4292	053.7			20	6			47
4426	054.2			20	5			45
4560	054.6			16	5			37
4694	055.1			14	7			36
4828	055.6			7	10			29
4962	056.1			3	•11			25
5096	056.6			2	12			23
5230	057.0			2	11	0		21
5364	057.5			2	7	1		18
5499	058.0			2	10	3		24
5633	058.5			2	7	3		20
5767	059.0			2	4	5		17
5901	059.4			2	5	5		20
6035	059.9			0	4	6		15
6169	060.4				4	7		16
6303	060.9				2	7		13
6437	061.4				2	7		13
6571	061.8				0	•6	0	9
6706	062.3				1	4	1	10
6840	062.8				1	4	1	10
6974	063.3				1	3	3	12
7108	063.8				0	2	2	6
7242	064.2				1	1	2	6
7376	064.7				1	0	1	3
7510	065.2				0		4	6
7644	065.7						5	8
7778	066.2						•4	8
7913	066.6						5	8
8047	067.1						2	4
8181	067.6						3	5
8315	068.1						2	3
8449	068.6						2	3
8583	069.0						1	1
8717	069.5						1	1
8851	070.0						0	0
CIC		63	406	683	504	237	149	
Peak		6	16	24	13	9	6	
Pass		6	5	4	3	1	2	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #260
10 October 1969
0707-0730 EST

Arc 10.0 km
Ref Pt 024
SO2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 250	308	373	442	509	533	VIC
0	000.2	0						[illegible]
134	000.9	1						[illegible]
268	001.7	1						[illegible]
402	002.5	*1						[illegible]
536	003.3	1						[illegible]
671	004.0	0						[illegible]
805	004.8							[illegible]
939	005.6		[illegible]					[illegible]
1073	006.3		[illegible]					[illegible]
1207	007.1		[illegible]					3
1341	007.9		[illegible]					3
1475	008.6		[illegible]					4
1609	009.4		4					[illegible]
1743	010.2		[illegible]					6
1878	010.9		4					[illegible]
2012	011.7		5					[illegible]
2146	012.5		7					[illegible]
2280	013.2		9					[illegible]
2414	014.0		[illegible]					14
2548	014.8		[illegible]					[illegible]
2682	015.5		11	0				[illegible]
2816	016.3		13	3				[illegible]
2950	017.1		10	6				[illegible]
3085	017.9		[illegible]	12				38
3219	018.6		[illegible]	20				40
3353	019.4		[illegible]	27				[illegible]
3487	020.2		10	25				61
3621	020.9		4	16				[illegible]
3755	021.7		*13	22				[illegible]
3889	022.5		7	*31				[illegible]
4023	023.2		[illegible]	29				[illegible]
4157	024.0			31				[illegible]
4292	024.8			21				[illegible]
4426	025.5			13				[illegible]
4560	026.3			[illegible]				4
4694	027.1			[illegible]	0			4
4828	027.8			3	16			[illegible]
4962	028.6			[illegible]	11			[illegible]
5096	029.4			[illegible]	22	[illegible]	[illegible]	[illegible]
5230	030.1				13	[illegible]	[illegible]	[illegible]
5364	030.9				[illegible]	[illegible]	[illegible]	49
5499	031.7				39	[illegible]	[illegible]	[illegible]
5633	032.5				44	[illegible]	[illegible]	[illegible]
5767	033.2				*40	[illegible]	[illegible]	[illegible]
5901	034.0				36	[illegible]	[illegible]	[illegible]
6035	034.8				22	*[illegible]	[illegible]	[illegible]
6169	035.5				15	14	[illegible]	[illegible]
6303	036.3				6	[illegible]	[illegible]	[illegible]
6437	037.1				[illegible]	[illegible]	[illegible]	6
6571	037.8					[illegible]	[illegible]	[illegible]
6706	038.6					[illegible]	[illegible]	[illegible]
6840	039.4					[illegible]	[illegible]	[illegible]
6974	040.1					[illegible]	[illegible]	[illegible]
7108	040.9					[illegible]	[illegible]	[illegible]
7242	041.7					[illegible]	[illegible]	[illegible]
7376	042.4					[illegible]	[illegible]	[illegible]
7510	043.2					[illegible]	[illegible]	[illegible]
7644	044.0					[illegible]	[illegible]	[illegible]
7778	044.7					[illegible]	[illegible]	
VIC		14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Peak		[illegible]	[illegible]	[illegible]	40	[illegible]	[illegible]	
Pass		6	[illegible]	[illegible]	2	[illegible]	4	

Keystone #261
10 October 1969
0730-0813 EST

Arc 10.0 km
Ref Pt 022
SO2 in pphm

Cum y (m) Dir (°) Traverse Height (m)

[illegible]

Table 3 (continued). PLUME CROSS SECTIONS

Homer City #262 Arc 4.0 km
11 October 1969 Ref Pt 023°
0648-0703 EST SO$_2$ in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 245	283	312	373	431	495	530	VIC
0	358.0		0						0
134	359.9		7						6
268	001.9		6						5
402	003.8		8	0					7
536	005.7		*12	13					26
671	007.6	0	8	35					49
805	009.6	*4	0	*40					54
939	011.5	0		0					0
1073	013.4				0				0
1207	015.3				26				41
1341	017.2				37	0		0	60
1475	019.2				72	*44	0	0	189
1609	021.1				*89	35	*16	0	222
1743	023.0				63	10	1	0	119
1878	024.9				69	0	3	0	114
2012	026.8				0		5	0	6
2146	028.8						0	0	0
CIC		17	150	317	1275	325	96	0	
Peak		6	19	45	97	54	23	0	
Pass		6	7	5	4	3	1	2	

Homer City #263 Arc 8.0 km
11 October 1969 Ref Pt 021°
0707-0732 EST SO$_2$ in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 215	245	312	380	433	523	555	585	VIC
0	357.9	0	0							0
134	358.9	0	2							3
268	359.9	0	1							2
402	000.8	0	4							5
536	001.8	0	4							5
671	002.8	0	6							8
805	003.7	0	5							6
939	004.7	0	4							5
1073	005.6	0	*6							9
1207	006.6	0	3	0						4
1341	007.6	0	0	1						2
1475	008.5			5						8
1609	009.5			13						24
1743	010.4			*15						28
1878	011.4			9						16
2012	012.4			2						3
2146	013.3			0	0					0
2280	014.3				18					29
2414	015.2				37					60
2548	016.2				32					52
2682	017.2				*38					61
2816	018.1				27					44
2950	019.1				24					39
3085	020.0				29					47
3219	021.0				32					52
3353	022.0				10					16
3487	022.9				2					3
3621	023.9				9	0	0			15
3755	024.8				0	8	2			16
3889	025.8					17	4			36
4023	026.8					33	7		0	66
4157	027.7					*35	16		0	84
4292	028.7					26	*17		0	70
4426	029.6					24	16		0	65
4560	030.6					10	9		0	31
4694	031.6					5	5		0	16
4828	032.5					0	1		0	2
4962	033.5						3	0	0	4
5096	034.4						1	*9	0	11
5230	035.4						0	4	0	1
5364	036.4							0	0	0
CIC		0	130	163	929	500	296	48	0	
Peak		0	6	17	42	37	21	13	0	
Pass		4	3	2	1	5	6	7	8	

Homer City #264 Arc 16.0 km
11 October 1969 Ref Pt 021°
0738-0812 EST SO$_2$ in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 155	186	215	245	308	367	425	497	525	560	VIC
0	005.6	0	0									0
134	006.1	0	1									1
268	006.6	0	1									1
402	007.1	0	1									1
536	007.6	0	1									1
671	008.0	0	*1									1
805	008.5	0	*2	0								2
939	009.0	0	*2	1								2
1073	009.5	0	1	2								3
1207	010.0	0	1	2								2
1341	010.4	0	1	1								2
1475	010.9	0	1	1								2
1609	011.4	0	1	2								2
1743	011.9	0	1	2								2
1878	012.4	0	1	2								2
2012	012.8	0	1	*2								3
2146	013.3	0	1	2								2
2280	013.8	0	1	1								2
2414	014.3	0	1	2								2
2548	014.8	0	1	0								1
2682	015.2	0	1	0	0							1
2816	015.7	0	1	1	1							3
2950	016.2	0	1	1	1							3
3085	016.7	0	1	2	2							5
3219	017.2	0	1	1	1							3
3353	017.6	0	0	0	1							1
3487	018.1				0	0						0
3621	018.6				1	2						5
3755	019.1				1	5						9
3889	019.6				*2	6						12
4023	020.0				0	6						10
4157	020.5					3						5
4292	021.0					*6						10
4426	021.5					6						10
4560	022.0					3						5
4694	022.4					1	0					4
4828	022.9					0	7	0				11
4962	023.4						14	3				27
5096	023.9						*15	4				30
5230	024.4						14	3				27
5364	024.8						15	5				32
5499	025.3						10	7				28
5633	025.8						7	11				30
5767	026.3						2	12				24
5901	026.8						0	9				16
6035	027.2						0	14				24
6169	027.7						2	*22				41
6303	028.2						6	21				46
6437	028.7						4	12				27
6571	029.2						6	0				23
6706	029.6						3	6				15
6840	030.1						6	6				20
6974	030.6						2	4				10
7108	031.1						0	7	0			12
7242	031.6							4	2			10
7376	032.0							4	5		0	14
7510	032.5							6	4		3	19
7644	033.0							2	5		1	11
7778	033.5							5	6		*4	20
7913	034.0							9	6		4	27
8047	034.4							2	9	0	2	17
8181	034.9							0	*9	*2	4	17
8315	035.4							0	4	0	1	6
8449	035.9							1	7		0	11
8583	036.4							2	8			14
8717	036.8							4	7			16
8851	037.3							4	6			15
8985	037.8							0	5			7
9120	038.3								4			5
9254	038.8								5			7
9388	039.2								3			4
9522	039.7								1			1
9656	040.2								1			1
9790	040.7								1			1
9924	041.2								0			0
CIC		0	93	101	46	141	414	717	363	11	73	
Peak		0	2	5	3	7	16	24	12	4	6	
Pass		10	9	8	7	6	5	4	1	3	2	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City #265 Arc 4.0 km
13 October 1969 Ref Pt 342°
0648-0706 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 188	224	248	316	372	438	503	536	VIC
0	334.3				0	0				0
134	336.2				3	6				15
268	338.2				•15	20		0	0	59
402	340.1				13	•30		8	0	83
536	342.0				19	28		•7	0	87
671	343.9			0	10	15		13	0	59
805	345.8	0	0	3	7	6	0	0	0	25
939	347.8	0	•10	7	0	3	21		0	58
1073	349.7	0	9	22		0	•88		0	176
1207	351.6	0	9	•21			47		0	115
1341	353.5	0	9	8			51			106
1475	355.4	0	9	0			28			56
1609	357.4	0	0				0			0
CIC		0	167	225	246	392	817	104	0	
Peak		0	10	28	20	38	88	17	0	
Pass		7	8	6	5	1	2	3	4	

Homer City #266 Arc 10.0 km
13 October 1969 Ref Pt 347°
0710-0734 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 158	188	248	313	378	438	463	496	VIC
0	343.9	0	0		0					0
134	344.7	0	1		2					5
268	345.5	0	1		4	0				8
402	346.2	0	•1		5	3				15
536	347.0	0	1	0	•10	8				32
671	347.8	0	1	1	8	28				64
805	348.5	0	1	1	3	33				63
939	349.3	0	0	1	2	•32				59
1073	350.1			•2	1	19	0			37
1207	350.8			1	0	17	1			31
1341	351.6			1		6	14			28
1475	352.4			1		1	26			33
1609	353.1			0		0	39	0		43
1743	353.9						•51	11		66
1878	354.7						34	6		42
2012	355.5						23	20		41
2146	356.2						17	•29		42
2280	357.0						23	20		41
2414	357.8						24	26		46
2548	358.5						14	27	0	37
2682	359.3						12	28	1	36
2816	000.1						6	16	•1	20
2950	000.8						4	11	1	14
3085	001.6						5	7	0	11
3219	002.4						0	0		0
CIC		0	21	29	133	531	1049	727	11	
Peak		0	2	2	12	35	57	32	2	
Pass		8	7	6	5	1	2	4	3	

Homer City #268 Arc 10.0 km
15 October 1969 Ref Pt 213°
0820-0850 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 298	365	437	495	555	577	613	VIC
0	189.2		0						0
134	189.9		1						3
268	190.7		2						4
402	191.5		1						2
536	192.3		2						4
671	193.0		3						5
805	193.8		5						8
939	194.6		3						6
1073	195.3		6						11
1207	196.1		9						16
1341	196.9		7						4
1475	197.6		5						10
1609	198.4		•7						14
1743	199.2		9						16
1878	199.9		4						7
2012	200.7		3						5
2146	201.5		4						8
2280	202.2		5						9
2414	203.0		1	0					2
2548	203.8		0	1					2
2682	204.5			1					2
2816	205.3			2					3
2950	206.1	0		1					2
3085	206.9	•1		1					4
3219	207.6	0		2					3
3353	208.4			3					5
3487	209.2			4					7
3621	209.9			5					9
3755	210.7			4					7
3889	211.5			6	0				10
4023	212.2			7	2				15
4157	213.0			13	3				27
4292	213.8			22	4				44
4426	214.5			27	8				59
4560	215.3			38	9				80
4694	216.1			52	9	0	0	0	104
4828	216.8			•54	14	6	•1	0	123
4962	217.6			38	28	19	0	0	131
5096	218.4			54	31	16		0	160
5230	219.1			23	55	53		0	184
5364	219.9			8	99	•100		0	279
5499	220.7			6	110	77		0	268
5633	221.5			4	•117	2		0	194
5767	222.2			4	57	0		0	97
5901	223.0			2	55				90
6035	223.8			0	11				17
6169	224.5				6				10
6303	225.3				0				0
CIC		4	266	1375	2217	906	4	0	
Peak		3	10	58	119	108	2	0	
Pass		3	2	1	4	5	7	6	

Homer City #267 Arc 4.0 km
15 October 1969 Ref Pt 182°
0751-0817 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 297	335	370	435	495	560	585	VIC
0	[illegible]			0					0
134	182.0			9					12
268	183.9	0		5					6
402	185.8	0	0	10					14
536	187.7	0	•11	•18					36
671	189.7	0	10	17					33
805	191.6	0	6	12					21
939	193.5	0	0	7					9
1073	195.4	0		0					0
1207	197.4					0			0
1341	199.3					10			17
1475	201.2					13			21
1609	203.1				0	19			31
1743	205.1				15	32			78
1878	207.0				27	38			107
2012	208.9				36	68			172
2146	210.8				49	74	0	0	203
2280	212.7				30	•95	13	0	224
2414	214.7				39	36	7	0	133
2548	216.6				•59	20	27	0	164
2682	218.5				22	0	9	0	47
2816	220.4				0		96	0	116
2950	222.3						•111	0	135
3085	224.3						80	0	96
3219	226.2						20	0	24
3353	228.1						0	0	0
CIC		0	100	282	996	1456	1303	0	
Peak		0	14	23	67	109	125	0	
Pass		6	7	5	1	2	3	4	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City #269 Arc 16.0 km
15 October 1969 Ref Pt 210°
0856-0921 EST SO2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 265	293	365	425	487	553	583	VIC
0	200.4		0						0
134	200.9		1						1
268	201.4		1						2
402	201.8		2						3
536	202.3		2						2
671	202.8		2						2
805	203.3		2						3
939	203.8	0	2						3
1073	204.2	1	2						3
1207	204.7	1	1						2
1341	205.2	1	4	0					6
1475	205.7	0	2	1					6
1609	206.2	0	5	0					7
1743	206.6	2	•4	2					11
1878	207.1	2	4	2					11
2012	207.6	0	2	2					6
2146	208.1	2	1	1					5
2280	208.6	3	0	0					3
2414	209.0	4		1					4
2548	209.5	4		3					8
2682	210.0	5		7					5
2816	210.5	•4		0					4
2950	211.0	2		2					5
3085	211.4	0		4	0				7
3219	211.9			8	2				17
3353	212.4			8	3				19
3487	212.9			8	7				27
3621	213.4			•10	15				42
3755	213.8			8	21				49
3889	214.3			7	19				44
4023	214.8			2	32				56
4157	215.3			0	•33				55
4292	215.8				20				32
4426	216.2				14				22
4560	216.7				13	0			22
4694	217.2				4	2			10
4828	217.7				2	3			9
4962	218.2				0	5			8
5096	218.6					7			12
5230	219.1					12			21
5364	219.6					15		0	26
5499	220.1					26		0	44
5633	220.6					35		0	60
5767	221.0					53		0	90
5901	221.5					60		0	[illegible]
6035	222.0					59		0	101
6169	222.5					70	0	0	120
6303	223.0					•83	2	0	147
6437	223.4					44	5	0	80
6571	223.9					58	•20	0	126
6706	224.4					26	11	0	59
6840	224.9					7	1	0	14
6974	225.4					0	0	0	0
CIC		115	140	261	669	2031	146	0	
Peak		6	6	10	36	87	23	0	
Pass		7	6	5	4	1	2	3	

Homer City #270 Arc 4.0 km
17 October 1969 Ref Pt 070°
1017-1030 EST SO2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 90	160	215	285	345	407	455	VIC
0	058.5	0							0
134	060.4	2				0			4
268	062.3	•5		0		4			16
402	064.2	•5	0	5	0	2			21
536	066.2	0	4	•40	3	4		0	85
671	068.1		•11	11	2	2		•1	44
805	070.0		4	5	2	4		0	25
939	071.9		3	0	55	•2			104
1073	073.8		1		•61	4	0		114
1207	075.8		0		29	0	2		53
1341	077.7				43		4		81
1475	079.6				16		•6		28
1609	081.5				6		5		18
1743	083.4				0		4		6
1878	085.4						0		0
CIC		43	[illegible]	221	795	85	59	4	
Peak		5	12	43	67	5	6	1	
Pass		7	6	5	4	3	2	1	

Homer City #271 Arc 10.0 km
17 October 1969 Ref Pt 072°
1034-1102 EST SO2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 215	280	350	405	473	530	593	650	700	765	VIC
0	064.3					0						0
134	065.1					2						3
268	065.9					2						3
402	066.6					2						3
536	067.4					5						8
671	068.2					5		0				8
805	068.9					7		2				15
939	069.7			0	0	6		4		0		16
1073	070.5			2	1	6		1		•3		21
1207	071.2			1	1	6		1	0	•3		20
1341	072.0			1	0	4		2	1	•2		16
1475	072.8			1	5	9	0	3	4	0		35
1609	073.5			1	3	7	1	2	•2	2		29
1743	074.3			1	5	9	2	4	2	0	0	37
1878	075.1			5	6	4	3	3	2		3	43
2012	075.8			5	9	•8	9	1	0		0	53
2146	076.6			•4	9	9	7	•4			0	54
2280	077.4			4	2	2	7	4			6	41
2414	078.1			4	[illegible]	0	4	0			•5	38
2548	078.9			3	•22		14				6	74
2682	079.7			2	13		•15				5	57
2816	080.5			0	2		8				4	23
2950	081.2				0		8				2	16
3085	082.0						4				1	8
3219	082.8						1				0	2
3353	083.5						0					0
3487	084.3	0										0
3621	085.1	2	0									3
3755	085.8	3	1									7
3889	086.6	4	1									8
4023	087.4	•3	3									12
4157	088.1	3	3									11
4292	088.9	0	4									8
4426	089.7		5									10
4560	090.4		•6									12
4694	091.2		7									13
4828	092.0		7									12
4962	092.8		6									11
5096	093.5		5									[illegible]
5230	094.3		4									6
5364	095.1		3									5
5499	095.8		2									4
5633	096.6		0									0
5767	097.4		1									2
5901	098.1		0									0
CIC		61	214	126	323	343	296	116	44	38	122	
Peak		5	9	6	26	12	17	6	5	3	[illegible]	
Pass		10	9	8	1	2	3	4	5	6	7	

Homer City #272 Arc 4.0 km
18 October 1969 Ref Pt 070°
0710-0725 EST SO2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 172	225	285	350	415	485	510	545	VIC
0	050.8		0							0
134	052.7		5							7
268	054.6		10							16
402	056.6		20		0					29
536	058.5		•21	0	9					49
671	060.4		6	6	22					57
805	062.3	0	0	5	17					38
939	064.2	•6		13	•34					91
1073	066.2	0		15	17	0				55
1207	068.1			•18	10	19				82
1341	070.0			0	0	74				133
1475	071.9					•265				477
1609	073.8					57				102
1743	075.8					0			0	0
1878	077.7								0	0
2012	079.6							0	0	0
2146	081.5							•4	0	4
2280	083.4						0	0	0	0
2414	085.4						•27		0	[illegible]
2548	087.3						0			0
CIC		25	225	204	401	1492	100	17	0	
Peak		8	29	[illegible]	43	277	34	14	0	
Pass		8	7	6	5	1	2	3	4	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City #273 Arc 10.0 km
18 October 1969 Ref Pt 072°
0730-0758 EST SO2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 170	228	285	350	416	445	480	VIC
0	050.5			0					0
134	051.3			3					5
268	052.0			2					4
402	052.8			3					6
536	053.6			3					5
671	054.3			3					5
805	055.1			4					6
939	055.9			3					5
1073	056.6			6					10
1207	057.4			6					10
1341	058.2			4					6
1475	058.9			6					10
1609	059.7			9					15
1743	060.5			14					23
1878	061.2			14					23
2012	062.0			19					30
2146	062.8			24					39
2280	063.5	0		21					35
2414	064.3	0		4					6
2548	065.1	0		13					21
2682	065.9	0		15					24
2816	066.6	0		14					23
2950	067.4	0	0	15					25
3085	068.2	0	1	39					65
3219	068.9	0	3	33					58
3353	069.7	0	4	31					56
3487	070.5	0	3	27					50
3621	071.2	0	1	19					32
3755	072.0	0	1	34				0	56
3889	072.8	0	1	•43					73
4023	073.5	0	2	10				1	20
4157	074.3	0	3	2				1	8
4292	075.1	0	2	2	0			1	6
4426	075.8	0	•2	0	2			1	9
4560	076.6	0	1		4			•2	10
4694	077.4	0	1		6	0		1	15
4828	078.1	0	1		13	2		1	24
4962	078.9	0	1		24	4		0	40
5096	079.7	0	1		26	7			45
5230	080.5	0	1		18	5			40
5364	081.2	0	1		32	11	0		71
5499	082.0	0	1		22	14	1		60
5633	082.8	0	1		16	13	1		44
5767	083.5	0	2		19	6	1		42
5901	084.3	0	0		•27	7	1		60
6035	085.1	0	2		28	4	•1		59
6169	085.8		2		6	2	2		16
6303	086.6		2		4	4	0		16
6437	087.4		2		3	5	0		16
6571	088.1		2		2	13	1		31
6706	088.9		0		7	•62	1		91
6840	089.7				3	39	0		54
6974	090.4				3	30	1		44
7108	091.2				1	14	0		22
7242	092.0				4	10			19
7346	092.7				0	0			0
CIC		0	176	1601	965	927	44	18	
Peak		0	5	48	37	65	4	2	
Pass		3	2	1	4	5	7	6	

Homer City #274 Arc 16.0 km
18 October 1969 Ref Pt 075°
0823-0854 EST SO2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 280	350	420	480	VIC
0	050.0		0			0
134	050.0		2			3
268	051.0		2			3
402	051.5		2			4
536	051.9		2			3
671	052.4		1			2
805	052.9		1			2
939	053.4		2			3

Homer City #274 (continued)

Cum y (m)	Dir (°)	Traverse Height (m) 280	350	420	480	VIC
1073	053.9		2			4
1207	054.3		1			5
1341	054.8		1			4
1475	055.3		2			4
1609	055.8		1			3
1743	056.3		1			4
1878	056.8		1			4
2012	057.2		1			3
2146	057.7		1			3
2280	058.2		1			2
2414	058.7		0			0
2548	059.2		1			2
2682	059.6		0	0		0
2816	060.1		1	1		4
2950	060.6		2	3		9
3085	061.1	0	2	3		9
3219	061.6	2	1	1		6
3353	062.0	2	2	1		8
3487	062.5	4	1	1		13
3621	063.0	2	1	4		15
3755	063.5	2	1	4		13
3889	064.0	3	3	4		16
4023	064.4	2	2	3		14
4157	064.9	3	1	2		12
4292	065.4	4	1	1		11
4426	065.9	3	2	0		10
4560	066.4	4	2	0		10
4694	066.8	4	2	2		15
4828	067.3	•6	1	4		20
4962	067.8	1	1	3		17
5096	068.3	4	2	4		19
5230	068.8	3	3	3		17
5364	069.2	2	4	2		15
5499	069.7	4	1	0		13
5633	070.2	4	2	0		11
5767	070.7	•4	4	2		20
5901	071.2	3	3	4		20
6035	071.6	3	3	1		23
6169	072.1	3	4	0		17
6303	072.6	4	5	1		17
6437	073.1	3	5	1		21
6571	073.5	4	6	0		19
6706	074.0	4	6	0		19
6840	074.5	5	8	1		25
6974	075.0	4	7	3		25
7108	075.5	4	6	1		20
7242	075.9	1	4	2		17
7376	076.4	1	4	4		16
7510	076.9	1	5	3		19
7644	077.4	2	6	0		14
7779	077.9	2	7	0		17
7913	078.4	3	8	2		25
8047	078.8	3	•9	3		27
8181	079.3	2	8	3		25
8315	079.8	1	8	7		30
8449	080.3	4	7	5		29
8583	080.8	3	•7	3		26
8717	081.2	1	8	5		27
8851	081.7	2	6	4		23
8985	082.2	2	6	8		26
9120	082.7	2	3	7		21
9254	083.2	3	4	6		22
9388	083.6	3	6	6		28
9522	084.1	2	8	8		34
9656	084.6	1	5	11		31
9790	085.1	3	5	•10		31
9924	085.6	2	6	7	0	27
10058	086.0	1	6	5	4	28
10192	086.5	1	8	5	4	31
10327	087.0	0	8	6	1	21
10461	087.5		4	5	3	21
10595	088.0		4	4	2	18
10729	088.4		4	2	•3	17
10863	088.9		4	2	3	15
10997	089.4		0	1	2	5
11131	089.9			2	4	9
11265	090.4			1	2	4
11399	090.8			1	2	5
11534	091.3			0	2	3
11668	091.8				0	0
CIC		892	1080	736	113	
Peak		6	9	12	5	
Pass		4	1	2	3	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City #275 Arc 4.0 km
20 October 1969 Ref Pt 039°
0644-0700 EST SO_2 in pphm

Cum y	Dir	Traverse Height (m)									
(m)	(°)	123	155	188	243	310	370	428	495	535	VIC
0	031.3				0						0
134	033.2				7						11
268	035.2	0			12						19
402	037.1	0	0		5	0					7
536	039.0	0	•5	0	15	10	0				47
671	040.9	0	0	10	•19	3	16				76
805	042.8	0		•16	3	5	52				116
939	044.8			12	12	6	•71	0		0	156
1073	046.7			•19	0	5	28	•2		0	79
1207	048.6			12		20	22	8	0	0	95
1341	050.5			0		•29	0	0	•13	0	70
1475	052.4					12			0	0	20
1609	054.4					0				0	0
CIC		0	21	250	262	325	683	42	50	0	
Peak		0	10	19	24	38	91	13	20	0	
Pass		8	9	7	6	5	4	1	2	3	

Homer City #276 Arc 10.0 km
20 October 1969 Ref Pt 039°
0706-0731 EST SO_2 in pphm

Cum y	Dir	Traverse Height (m)								
(m)	(°)	189	243	315	375	435	501	522	558	VIC
0	030.5		0							0
134	031.3		1							2
268	032.1		1							2
402	032.9		2							4
536	033.6	0	5							8
671	034.4	2	7							15
805	035.2	5	10							24
939	035.9	4	•11							25
1073	036.7	4	9							21
1207	037.5	3	5							13
1341	038.2	•3	5	0						14
1475	039.0	3	3	1						12
1609	039.8	2	1	2						9
1743	040.5	3	2	•8						23
1878	041.3	2	1	9	0	0				21
2012	042.1	3	1	6	3	1				23
2146	042.8	•5	2	4	1	5		0	0	28
2280	043.6	2	1	2	8	13		4	0	46
2414	044.4	3	0	1	10	•14		2	0	47
2548	045.1	3		1	5	11		1	0	33
2682	045.9	2		1	11	9		4	0	40
2816	046.7	1		1	16	8	0	4	0	45
2950	047.2	2		1	•19	5	2	•7	0	51
3085	048.2	1		1	20	6	1	6	0	51
3219	049.0	2		0	8	12	11	2	0	50
3353	049.8	1			10	6	18	3	0	51
3487	050.5	1			8	0	11	4	0	30
3621	051.3	1			13		8	3	0	34
3755	052.1	1			4		14	0	0	24
3889	052.8	0			2		10	0	0	15
4023	053.6				0		•27	1	0	32
4157	054.4						26	1	0	31
4292	055.1						12	0	0	14
4426	055.9						19			22
4560	056.7						14			16
4694	057.4						5			6
4828	058.2						11			13
4962	059.0						7			8
5096	059.7						1			1
5230	060.4						0			0
CIC		218	251	138	497	322	716	162	0	
Peak		5	14	10	22	21	38	11	0	
Pass		8	7	1	2	3	4	6	5	

Homer City #277 Arc 16.0 km
20 October 1969 Ref Pt 047°
0739-0800 EST SO_2 in pphm

Cum y	Dir	Traverse Height (m)					
(m)	(°)	215	303	375	430	500	VIC
0	037.4			0			0
134	037.9			2			3
268	038.4	0	0	1			3
402	038.8	1	1	0			4
536	039.3	2	1	1	0		8
671	039.8	2	0	1	1		8
805	040.3	1	1	2	1		9
939	040.8	2	0	8	1		22
1073	041.2	2	2	7	4		29
1207	041.7	3	2	7	4		29
1341	042.2	4	5	10	4		44
1475	042.7	4	5	9	4		43
1609	043.2	4	6	10	2		42
1743	043.6	•3	5	•9	5	0	45
1878	044.1	4	6	5	4	2	41
2012	044.6	4	8	3	9	1	48
2146	045.1	4	•6	3	5	0	36
2280	045.6	4	6	2	8	0	41
2414	046.0	4	5	4	7	0	37
2548	046.5	4	3	2	4	0	26
2682	047.0	3	4	2	6	0	30
2816	047.5	3	3	2	5	2	32
2950	048.0	3	3	2	6	•3	33
3085	048.4	4	3	3	•8	2	40
3219	048.9	3	3	3	7	4	38
3353	049.4	3	1	2	8	1	27
3487	049.9	4	1	1	8	0	29
3621	050.4	3	1	2	6	0	22
3755	050.8	3	0	3	2	0	16
3889	051.3	2		2	0	1	10
4023	051.8	1		1	1	1	8
4157	052.3	2		1	0	1	8
4292	052.8	0		3		1	7
4426	053.2			3		3	10
4560	053.7			2		2	7
4694	054.2			1		2	5
4828	054.7			1		1	4
4962	055.2			1		4	9
5096	055.6			0		4	7
5230	056.1					1	3
5364	056.6					1	3
5499	057.1					2	4
5633	057.6					1	2
5767	058.0					0	0
CIC		317	305	458	431	157	
Peak		5	9	11	11	5	
Pass		5	4	1	2	3	

Homer City #278 Arc 4.0 km
21 October 1969 Ref Pt 090°
0657-0714 EST SO_2 in pphm

Cum y	Dir	Traverse Height (m)									
(m)	(°)	150	183	248	310	370	430	495	557	620	VIC
0	074.6			0							0
134	076.6	0		12							20
268	078.5	0		•16		0	0	0			29
402	080.4	0	0	14	0	20	12	16			101
536	082.3	0	•16	9	9	28	42	33		0	222
671	084.2	0	8	0	12	21	31	60		0	217
805	086.2	0	0		8	•22	27	•70		0	214
939	088.1				•21	27	31	34	0	0	187
1073	090.0				16	0	•55	0	20	0	151
1207	091.9				9		0		10	0	32
1341	093.8				0				•93	0	156
1475	095.8								21	0	35
1609	097.7								0	0	0
CIC		0	92	187	275	425	712	767	521	0	
Peak		0	24	22	30	38	69	87	106	0	
Pass		5	4	3	2	1	6	7	8	9	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City #279 Arc 10.0 km
21 October 1969 Ref Pt 087
0720-0749 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)									VIC
		118	178	242	305	360	423	490	551	610	
0	069.3				0		0				0
134	070.1				2		2				6
268	070.9				2		2				6
402	071.6				[illegible]		1				6
536	072.4				3		2				9
671	073.2				3		3				10
805	073.9		0		3		4				12
939	074.7	0	1		4		5				17
1073	075.5	1	1		5		5				20
1207	076.2	1	1	0	6		4				20
1341	077.0	1	2	1	9		4				28
1475	077.8	1	3	1	7	0	7				31
1609	078.5	1	4	2	9	1	11				46
1743	079.3	2	5	2	8	2	9				46
1878	080.1	2	5	3	11	2	12				58
2012	080.9	3	6	3	•13	8	13				75
2146	081.6	4	6	3	11	11	10				73
2280	082.4	•3	•6	5	10	8	12				72
2414	083.2	3	2	5	12	10	13				74
2548	083.9	2	1	7	8	9	9				69
2682	084.7	2	0	4	5	12	8		0		51
2816	085.5	2		•6	2	16	17		1		76
2950	086.2	1		5	3	•19	•17	0	2		82
3085	087.0	1		5	0	21	11	2	2		70
3219	087.8	0		1		13	8	0	2		40
3353	088.5			2		13	7	0	3		42
3487	089.3			1		13	5	2	7		46
3621	090.1			0		9	6	2	14	0	50
3755	090.8					6	5	1	3	1	26
3889	091.6					3	2	7	5	0	28
4023	092.4					2	2	10	15	0	49
4157	093.1					2	2	5	•47	1	95
4292	093.9					1	2	18	25	0	77
4426	094.7					0	1	18	15	0	57
4560	095.5						0	13	5	0	31
4694	096.2							16	8	1	44
4828	097.0							•37	10	•1	83
4962	097.8							24	0	0	42
5096	098.5							15			25
5230	099.3							5			8
5364	100.1							0			0
CIC		107	154	206	504	662	794	640	599	26	
Peak		5	8	8	16	22	20	44	51	3	
Pass		9	8	7	6	5	4	1	2	3	

Homer City #280 Arc 16.0 km
21 October 1969 Ref Pt 079°
0756-0817 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)						VIC
		245	310	360	424	491	522	
0	078.0		0					0
134	078.5		1					1
268	079.0		1					1
402	079.5		1					1
536	080.0		2			0		3
671	080.4		3			1		7
805	080.9		3		0	3		9
939	081.4	0	•4		2	2		13
1073	081.9	1	6		2	3		18
1207	082.4	0	4		1	2	0	13
1341	082.8	1	4		2	2	1	15
1475	083.3	2	2		4	2	2	16
1609	083.8	1	1	0	3	4	3	17
1743	084.3	2	0	1	3	5	5	21
1878	084.8	3		2	3	4	3	20
2012	085.2	4		2	4	7	5	30
2146	085.7	•3		1	4	7	6	28
2280	086.2	5		3	3	9	•5	34
2414	086.7	4		3	•2	•7	6	31
2548	087.2	5		3	1	8	6	29
2682	087.6	3		5	2	4	4	26
2816	088.1	2		4	0	4	3	18
2950	088.6	3		5		6	6	24
3085	089.1	1		5		4	4	17
3219	089.6	1		•3		4	2	16
3353	090.0	1		4		5	1	16
3487	090.5	1		3		4	1	13
3621	091.0	1		3		3	1	11
3755	091.5	0		1		1	0	3
3889	092.0			1		2		4
4023	092.4			0		1		2
4157	092.9					2		3
4292	093.4					0		0
4426	093.9					1		1
4560	094.4					1		2
4694	094.8					1		2
4828	095.3					2		3
4962	095.8					1		2
5096	096.3					0		0
5230	096.8					1		0
5364	097.2					0		0
CIC		166	116	190	131	414	236	
Peak		6	7	6	5	10	8	
Pass		6	5	4	3	1	2	

Homer City #281 Arc 4.0 km
24 October 1969 Ref Pt 289°
0700-0724 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)									VIC
		265	295	352	417	490	553	608	638	665	
0	271.7						0				0
134	273.6						34				53
268	275.6					0	76				119
402	277.5					70	64				227
536	279.4			0		98	•139				397
671	281.3			5		120	65				328
805	283.2			5		•132	27				290
939	285.2			17	0	74	0		0	0	163
1073	287.1	0		23	37	47		0	1	0	200
1207	289.0	0		•44	54	9		8	5	0	200
1341	290.9	0		48	29	28		•32	•2	0	221
1475	292.8	0	0	8	7	16		27	2	0	87
1609	294.8	0	8	2	34	0		0	1	0	76
1743	296.7	0	•8	9	•43				1	0	108
1878	298.6	0	5	7	15				2	0	46
2012	300.5	0	5	0	0				3	0	8
2146	302.4		9						0	0	11
2280	304.4		0								0
CIC		0	129	625	787	2129	1450	242	71	0	
Peak		0	15	55	55	142	161	37	10	0	
Pass		4	3	2	1	5	6	7	8	9	

Homer City #282 Arc 10.0 km
24 October 1969 Ref Pt 277°
0730-0753 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)							VIC
		265	290	346	413	480	545	579	605	
0	268.5				0					0
134	269.3				2		0			4
268	270.1				13		1			24
402	270.9				16		8			39
536	271.6				22		8			50
671	272.4				18		4			38
805	273.2				9	0	4			22
939	273.9				11	2	0			23
1073	274.7			0	22	2	0			43
1207	275.5			1	21	6	0			50
1341	276.2			0	•21	58	0		0	142
1475	277.0			0	6	74	0		0	141
1609	277.8			2	0	64	3		0	121
1743	278.5			6		77	5		0	151
1878	279.3			6		84	•9		0	170
2012	280.1			8		•94	5	0	0	187
2146	280.8	0		9		27	2	3	0	66
2280	281.6	0		9		10	0	5	0	37
2414	282.4	0		10		3		5	0	25
2548	283.1	0		•19		0		•8	0	40
2682	283.9	0	0	11				10	0	45
2816	284.7	0	1	9				5	0	19
2950	285.5	0	•2	5				2	0	14
3085	286.2	0	4	4				0	0	11
3219	287.0	0	4	2				0	0	7
3353	287.8	0	2	1				0	0	4
3487	288.5	0	2	1				2	0	5
3621	289.3	0	1	0				0	0	1
3755	290.1	0	0							0
CIC		0	60	377	584	1792	186	154	0	
Peak		0	5	22	26	113	12	11	0	
Pass		8	7	6	5	4	1	3	[illegible]	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City #[illegible] Arc 16.0 km
24 October 1969 Ref Pt 279°
0801-0838 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 160	228	261	287	345	412	485	549	610	VIC
0	275.2							0			0
134	275.6							7			13
268	276.1							24			44
402	276.6							49			89
536	277.1							*70			128
671	277.6						0	65			117
805	278.0						1	59			110
939	278.5						0	34			61
1073	279.0						1	6			12
1207	279.5						38	0			71
1341	280.0						53				100
1475	280.4						*63				120
1609	280.9						54				102
1743	281.4						38				71
1878	281.9						29		0		53
2012	282.4						21		1		41
2146	282.8						17		1		33
2280	283.3						16		2		33
2414	283.8						13		5		33
2548	284.3						16		7		41
2682	284.8						21		6		48
2816	285.2					0	24		9		59
2950	285.7					10	26		*7		79
3085	286.2			0		14	13		7		59
3219	286.7			1		14	13		5		58
3353	287.2			7		12	10		5		52
3487	287.6	0		2		21	0		4		42
3621	288.1	3		6		31			6		71
3755	288.6	4		2		*30			5	0	68
3889	289.1	4		6		12			4	1	39
4023	289.6	4		*9		5			3	0	28
4157	290.0	4		8		0			1	0	16
4292	290.5	4		1					1	1	11
4426	291.0	*4	0	0	0				1	1	11
4560	291.5	4	1		6				1	0	19
4694	292.0	4	0		*8				1	1	20
4828	292.4	2	1		5				1	1	14
4962	292.9	2	2		3				0	2	12
5096	293.4	1	11		13					2	36
5230	293.9	3	*28		4					*1	52
5364	294.4	3	18		0					2	33
5499	294.8	2	11							1	21
5633	295.3	3	6							2	17
5767	295.8	1	5							2	13
5901	296.3	4	2							1	12
6035	296.8	3	2							1	9
6169	297.2	0	1							0	1
6303	297.7		0								0
CIC		216	322	152	142	537	1676	1126	311	82	
Peak		6	33	12	14	34	68	73	10	3	
Pass		9	8	7	6	5	4	1	2	3	

Keystone #284 Arc 4.0 km
28 October 1969 Ref Pt 123°
0726-0744 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 305	337	357	421	497	557	587	617	VIC
0	111.5				0					0
134	113.4				5					9
268	115.3				9					17
402	117.2				22					41
536	119.2				84					157
671	121.1	0			*102					191
805	123.0	0	0	0	37					69
939	124.9	0	6	8	63					131
1073	126.8	0	3	19	30				0	79
1207	128.8	0	3	0	60	0		0	0	114
1341	130.7	0	5	25	0	*39		*5	0	106
1475	132.6	0	3	10		6	0	0	0	24
1609	134.5	0	*8	11		1	12	2	0	34
1743	136.4	0	6	*29		0	27	0	0	69
1878	138.4	0	0	12		16	37		0	87
2012	140.3			0		14	*65		0	104
2146	142.2					0	0			0
CIC		0	121	407	1486	277	508	25	0	
Peak		0	12	40	115	55	76	6	0	
Pass		7	8	6	1	2	3	5	4	

Keystone #285 Arc 10.0 km
28 October 1969 Ref Pt 142°
0749-0820 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 297	333	357	430	497	557	617	637	VIC
0	108.2			0						0
134	109.0			1						1
268	109.7			1						1
402	110.5			1						2
536	111.3			2						3
671	112.0			0						0
805	112.8			0						0
939	113.6			0						0
1073	114.3			0						0
1207	115.1			0						0
1341	115.9			0						0
1475	116.6			0						0
1609	117.4			0	0					0
1743	118.2			0	1					2
1878	118.9			2	2					6
2012	119.7	0		3	2					8
2146	120.5	0		4	1					7
2280	121.3	0		1	4					9
2414	122.0	0		4	1					8
2548	122.8	0		5	2					11
2682	123.6	0		6	5					17
2816	124.3	0		9	8					27
2950	125.1	0		12	3					22
3085	125.9	0		18	1					25
3219	126.6	0		24	1					32
3353	127.4	0		26	1					35
3487	128.2	0	0	31	0					39
3621	128.9	0	2	*30	1					43
3755	129.7	0	*8	14	0					25
3889	130.5	0	7	0	0					5
4023	131.2	0	0		0					0
4157	132.0	0			0					0
4292	132.8	0			0					0
4426	133.5				0					2
4560	134.3				19					35
4694	135.1				53					99
4828	135.9				*90					171
4962	136.6				47					88
5096	137.4				13	0				25
5230	138.2				12	4				28
5364	138.9				25	10				63
5499	139.7				71	21				167
5633	140.5				37	30				120
5767	141.2				11	19				53
5901	142.0				4	8				21
6035	142.8				2	12	0			24
6169	143.5				1	15	2			31
6303	144.3				1	22	4			44
6437	145.1				0	*34	6			68
6571	145.8					32	15			78
6706	146.6					30	44			121
6840	147.4					21	49	0	0	114
6974	148.1					23	50	1	0	119
7108	148.9					15	45	3	0	100
7242	149.7					11	46	12	0	105
7376	150.5					31	*55	11	0	155
7510	151.2					7	45	20	0	105
7644	152.0					0	25	14	0	55
7778	152.8						0	5	0	5
7913	153.5							2	0	3
8047	154.3							*30	0	33
8181	155.1							13	0	14
8315	155.8							2	0	3
8449	156.6							0	0	0
CIC		0	62	707	1511	1238	1387	417	0	
Peak		0	11	34	99	49	59	36	0	
Pass		3	4	2	1	5	6	7	8	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #286 Arc 16.0 km
28 October 1969 Ref Pt 141
0841-0919 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 290	345	412	477	540	605	660	700	725	VIC
0	133.3	0									0
134	133.8	1									1
268	134.3	1									1
402	134.8	1									1
536	135.2	0									0
671	135.7	1									1
805	136.2	1									[illegible]
939	136.7	1									1
1073	137.2	1									1
1207	137.6	1									1
1341	138.1	1									1
1475	138.6	1									1
1609	139.1	1									1
1743	139.6	•1									1
1878	140.0	1									1
2012	140.5	1									1
2146	141.0	1	0								1
2280	141.5	0	1								1
2414	142.0	0	2								2
2548	142.4	0	4								2
2682	142.9	1	2								3
2816	143.4	1	1								5
2950	143.9	1	2			0					3
3085	144.4	0	2			1					6
3219	144.8		4			2					10
3353	145.3		•2			2					7
3487	145.8		0	0	0	1					4
3621	146.3		0	1	1	2					7
3755	146.8		0	3	1	4					11
3889	147.2		0	4	1	9					26
4023	147.7		1	1	1	11					24
4157	148.2		0	0	0	16					29
4292	148.7		0	0	1	20					38
4426	149.2		1	3	1	36					70
4560	149.6		1	4	1	44					96
4694	150.1		1	7	1	•[illegible]					110
4828	150.6		1	6	3	43					91
4962	151.1		1	7	6	31					89
5096	151.6		1	14	6	71					107
5230	152.0		2	•15	6	[illegible]					117
5364	152.5		2	2	15	55	0				126
5499	153.0		1	1	•16	[illegible]	4	0			138
5633	153.5		1	1	14	56	23	1			183
5767	154.0		1	0	5	20	•164	1		0	228
5901	154.4		1		1	0	14	2		0	189
6035	154.9		0		1		23	•12		0	54
6169	155.4		0		2		6	0	0	0	16
6303	155.9		1		0		2	0	1	0	7
6437	156.4		0				0		4	0	2
6571	156.8								5	0	4
6706	157.3								•4	0	4
6840	157.8								0	0	0
CIC		70	157	243	320	2065	1047	70	46	0	
Peak		2	5	18	23	61	11	15	4	0	
Pass		9	8	7	6	1	2	3	4	5	

Keystone #287 Arc 4.0 km
29 October 1969 Ref Pt 253
0732-0742 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 180	215	255	314	370	406	VIC
0	249.2	0	0	0				0
134	251.1	0	•6	19				29
268	253.0	0	2	35				48
402	254.9	0	0	•44		0	0	59
536	256.8			0		16	0	20
671	258.8					51	0	63
805	260.7					•119	0	131
939	262.6					19	0	23
1073	264.5					0	0	0
1207	266.4				0		0	0
1341	268.4				241		0	388
1475	270.3				394		0	600
1609	272.2				176		0	267
1743	274.1				194			296
1878	276.1				399			607
2012	278.0				•336			514
2146	279.9				150			228
2280	281.8				35			53
2414	283.7				0			0
CIC		0	29	354	6900	692	0	
Peak		0	12	44	470	119	0	
Pass		5	6	4	2	1	2	

Keystone #288 Arc 10.5 km
29 October 1969 Ref Pt 243
0749-0805 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 172	210	255	313	370	400	437	VIC
0	256.1					0	0	0	0
134	256.9					4	2	•1	3
268	257.6					19	•13	1	35
402	258.4					•68	2	0	85
536	259.2					41	0		47
671	259.9					29			33
805	260.7					67			76
939	261.5					14			17
1073	262.2			0		23			26
1207	263.0			1		20			24
1341	263.8			1		24			29
1475	264.5	0		8		10			22
1609	265.3	0	0	7		0			10
1743	266.1	0	1	•8					12
1878	266.8	0	•2	0	0				2
2012	267.6	0	1		11				19
2146	268.4	0	0		114				183
2280	269.1	0			112				179
2414	269.9				•210				338
2548	270.7				67				107
2682	271.5				14				22
2816	272.2				4				7
2950	273.0				0				0
CIC		0	14	52	1908	1145	84	13	
Peak		0	4	10	223	74	22	4	
Pass		7	6	5	4	1	3	2	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #289 Arc 4.0 km
30 October 1969 Ref Pt 326°
0727-0748 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 239	272	303	351	383	423	495	523	563	VIC
0	291.4	0	0								0
134	293.3	0	7								6
268	295.3	0	21								18
402	297.2	0	•25								22
536	299.1	0	0								7
671	301.0	• 0	3	0							3
805	302.9	0	0	10							11
939	304.9			12							12
1073	306.8			5		0					5
1207	308.7			•23		33					57
1341	310.6			22	0	112					130
1475	312.6			0	80	•166					247
1609	314.5				•93	114					210
1743	316.4				36	54					90
1878	318.3				0	13					12
2012	320.2					0	0				0
2146	322.2						190				283
2280	324.1						284				424
2414	326.0						•341	0	0	0	511
2548	327.9						30	137	113	0	331
2682	329.8						0	•208	•262	0	518
2816	331.8							49	226	0	270
2950	333.7							0	105	0	95
3085	335.6								0	0	0
CIC		0	233	262	754	1762	3029	1417	2529	0	
Peak		0	29	33	120	176	355	223	276	0	
Pass		6	5	4	3	2	1	7	9	8	

Keystone #291 Arc 4.0 km
31 October 1969 Ref Pt 339°
0723-0735 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 270	305	360	425	469	502	VIC
0	327.5	0						0
134	329.4	0	•6					8
268	331.3	0	0					0
402	333.2	0						0
536	335.2	0						0
671	337.1	0		0				0
805	339.0	0		5				7
939	340.9	0		47	0			75
1073	342.8			•59	19			122
1207	344.8			50	150			298
1341	346.7			12	•142	0		226
1475	348.6			0	150	21		291
1609	350.5				76	68		131
1743	352.4				0	•140	0	143
1878	354.4					110	•10	121
2012	356.3					0	0	0
CIC		0	25	621	1922	1398	38	
Peak		0	11	76	199	164	15	
Pass		6	5	4	1	3	2	

Keystone #290 Arc 10.0 km
30 October 1969 Ref Pt 323°
0754-0820 EST SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 276	303	356	416	493	523	VIC
0	293.0	0	0					0
134	293.8	0	5					5
268	294.6	0	5					5
402	295.3	0	2					2
536	296.1	0	5					5
671	296.9	0	2					2
805	297.6	0	7					7
939	298.4	0	2					2
1073	299.2	0	9					10
1207	299.9	0	7					7
1341	300.7	0	1					1
1475	301.5	0	2					2
1609	302.3	0	12					13
1743	303.0	0	•33					36
1878	303.8	0	28					30
2012	304.6	0	18					19
2146	305.3	0	33					35
2280	306.1	0	14					15
2414	306.9	0	18					19
2548	307.6	0	18					19
2682	308.4	0	18					19
2816	309.2	0	6					6
2950	309.9	0	9					10
3085	310.7	0	11					11
3219	311.5	0	6					6
3353	312.2	0	0					0
3487	313.0							0
3621	313.8							0
3755	314.5							0
3889	315.3							0
4023	316.1			0				0
4157	316.9			13				19
4292	317.6			25				37
4426	318.4			90				[illegible]
4560	319.2			•119				179
4694	319.9			0				0
4828	320.7							0
4962	321.5							0
5096	322.2				0	0	0	0
5230	323.0				•147	8	0	280
5364	323.8				105	75	0	297
5499	324.5				23	66	0	135
5633	325.3				0	101	0	143
5767	326.1					66	0	93
5901	326.8					•123	0	176
6035	327.6					88	0	124
6169	328.4					19	0	26
6303	329.2					0	0	0
CIC		0	970	886	991	1956	0	
Peak		0	39	149	194	134	0	
Pass		6	5	4	3	1	2	

Table 3 (continued). PLUME CROSS SECTIONS

Keystone #292
31 October 1969
0739-0803 EST

Arc 10.0 km
Ref Pt 342°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)							VIC
		245	305	365	440	475	497	530	
0	322.0					0			0
134	322.8					*8			6
268	323.6					4			3
402	324.3					0			0
536	325.1					0			0
671	325.9	0				*1			2
805	326.6	0	0			4			3
939	327.4	0	2			4			6
1073	328.2	0	6			0			9
1207	328.9	0	2						4
1341	329.7	0	8						13
1475	330.5	0	15						24
1609	331.2	0	19						30
1743	332.0	0	12						19
1878	332.8	0	11						17
2012	333.5	0	*17						28
2146	334.3	0	0						0
2280	335.1	0							0
2414	335.9								0
2548	336.6								0
2682	337.4								0
2816	338.2								0
2950	338.9								0
3085	339.7								0
3219	340.5								0
3353	341.2								0
3487	342.0			0					0
3621	342.8			76					136
3755	343.5			87					155
3889	344.3			*83					151
4023	345.1			34					61
4157	345.8			9	0				17
4292	346.6			70	9				139
4426	347.4			70	16				150
4560	348.1			64	16				139
4694	348.9			60	32				153
4828	349.7			0	123				181
4962	350.5				186				274
5096	351.2				177				260
5230	352.0				163				239
5364	352.8				156				229
5499	353.5				184				270
5633	354.3				*197				291
5767	355.1				161				236
5901	355.8				88				129
6035	356.6				8				12
6169	357.4				23			0	34
6303	358.1				21			0	31
6437	358.9				0			0	0
6571	359.7							0	0
6706	000.4							0	0
6840	001.2							0	0
6974	002.0						0	0	0
7108	002.7						*36	0	27
7242	003.5						29	0	21
7376	004.3						0	0	0
CIC		0	337	1989	5595	76	239	0	
Peak		0	23	91	205	8	52	0	
Pass		6	5	1	2	7	3	4	

Keystone #293
1 November 1969
0801-0816 EST

Arc 4.0 km
Ref Pt 326°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)								VIC
		315	346	380	440	514	570	600	625	
0	320.2	0	0							0
134	322.2	0	9							8
268	324.1	0	9		0					8
402	326.0	0	*11		17					41
536	327.9	0	0		*62	0				112
671	329.8	0			54	15				122
805	331.8	0			60	51				197
939	333.7			0	9	*50				122
1073	335.6			8	0	27	0	0	0	57
1207	337.5			14		17	15	19	0	78
1341	339.4			*8		8	66	*42	0	133
1475	341.4			7		0	79	30	0	121
1609	343.3			0			*94	10	0	117
1743	345.2						30	0	0	35
1878	347.1						0			0
CIC		0	108	137	762	608	1025	367	0	
Peak		0	15	17	69	66	112	55	0	
Pass		8	7	6	5	1	2	4	3	

Keystone #294
1 November 1969
0821-0845 EST

Arc 10.0 km
Ref Pt 331°
SO_2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m)								VIC
		194	250	313	380	450	515	578	630	
0	316.4				0					0
134	317.2				1					1
268	317.9				1					2
402	318.7				0					0
536	319.5				1					1
671	320.2	0	0		3					5
805	321.0	0	1		1					3
939	321.8	0	1		6					13
1073	322.5	0	1		5					11
1207	323.3	0	*4	0	5					16
1341	324.1	0	0	1	2					5
1475	324.9	0		1	1					3
1609	325.6	0		2	3	0				9
1743	326.4	0		*6	2	3				19
1878	327.2	0		1	6	9				29
2012	327.9			1	7	15		0		42
2146	328.7			1	7	18	0	5		53
2280	329.5			0	*8	18	2	26		90
2414	330.2				0	16	5	*25		76
2548	331.0					12	9	28		80
2682	331.8					16	1	27		72
2816	332.5					*22	25	21	0	115
2950	333.3					21	34	13	3	120
3085	334.1					8	*21	8	16	85
3219	334.8					1	7	6	9	35
3353	335.6					0	3	0	15	26
3487	336.4						13		*17	46
3621	337.1						9		19	42
3755	337.9						3		9	18
3889	338.7						0		6	8
4023	339.5						2		3	8
4157	340.2						2		2	6
4292	341.0						1		0	2
4426	341.8						0			0
CIC		0	25	52	217	574	492	571	357	
Peak		0	4	9	12	25	36	30	20	
Pass		8	7	6	5	1	2	3	4	

Homer City #295 Arc 4.0 km
6 November 1969 Ref Pt 124°
0732-0758 EST SO2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 113	180	243	300	360	413	483	545	603	633	660	VIC
0	099.0				0								0
134	100.9				2								3
268	102.9		0		6								9
402	104.8		2		•8								17
536	106.7		•3		9			0			0		22
671	108.6		1		2			2			2		15
805	110.6	0	4		1			5		0	6		21
939	112.5	2	0		3			6		3	18		36
1073	114.4	1	1		0	0		2		•14	17		38
1207	116.3	2	3	0		3	0	3	0	4	11		29
1341	118.2	•1	0	3		9	4	4	2	5	•15		57
1475	120.2	1		8		4	11	4	6	0	0		53
1609	122.1	0		•11		•14	35	•11	6			0	130
1743	124.0			10		12	37	2	9			•1	113
1878	125.9			2		4	•31	0	•18			2	93
2012	127.8			0		0	14		5			0	31
2146	129.8						5		3				13
2280	131.7						4		2				9
2414	133.6						0		2				3
2548	135.5								0				0
CIC		29	65	125	115	164	509	143	192	99	252	18	
Peak		3	6	14	11	16	43	14	28	17	21	4	
Pass		11	10	9	8	7	1	2	3	4	6	5	

Homer City #296 Arc 10.0 km
6 November 1969 Ref Pt 112°
0806-0835 EST SO2 in pphm

Cum y (m)	Dir (°)	Traverse Height (m) 243	293	354	413	493	543	603	657	VIC
0	112.8					0				0
134	113.5					1				2
268	114.3					1				2
402	115.1					2				4
536	115.9					1				2
671	116.6					1				2
805	117.4		1			2	0			4
939	118.1		1	0		2	1			6
1073	118.9		1	1		3	2	0		11
1207	119.7		1	1		2	1	1		10
1341	120.5		1	1	0	3	3	2		15
1475	121.2		1	1	1	2	•2	5		19
1609	122.0		1	1	1	3	0	4		15
1743	122.8	0	•2	1	1	2	2	•4		19
1878	123.5	1	1	1	1	•4	0	4		19
2012	124.3	1	1	2	1	4	1	5		24
2146	125.1	1	1	3	1	0	2	3		17
2280	125.8	1	1	3	1		2	2	0	15
2414	126.6	2	1	•5	1		0	4	1	21
2548	127.4	•4	1	2	1		1	1	1	16
2682	128.1	2	0	1	1		0	0	2	9
2816	128.9	1		0	•2			0	3	9
2950	129.7	2			1			1	•4	12
3085	130.4	1			1			0	2	6
3219	131.2	1			•2				1	6
3353	132.0	1			1				0	3
3487	132.7	0			1				1	3
3621	133.5				0				1	1
3755	134.3								0	0
3889	135.1								0	0
4023	135.8								0	0
4157	136.6								1	1
4292	137.4								1	1
4426	138.1								0	0
CIC		64	50	82	64	128	64	138	64	
Peak		5	2	5	2	9	4	7	4	
Pass		8	7	6	5	1	2	3	4	

GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER

Table 4 presents the peak ground-level SO_2 concentrations measured during lengthwise flights under the plume. Each value is the maximum concentration in an interval of one-half kilometer on either side of the designated kilometer. The individual flights are identified by beginning and ending times and locations, with corresponding concentrations arranged under their respective distances downwind.

Table 5 summarizes the ground-level SO_2 concentrations obtained during crosswind flights under the plume. Although each arc distance from the plant is specified, many of the flights were made at distances corresponding to the cross sections. Each flight is identified by beginning and ending time and a rectangular origin near the plume center. The data are then listed in the plus y and negative y directions with the concentration at the origin repeated for both segments; actual flights, however, were continuous across the plume. Occasionally, only plus y or negative y segments are presented; this occurs if the origin was established outside the plume or if restrictions prevented a complete crosswind flight.

The values shown in this table are instantaneous readings reduced at 6-second intervals. This corresponds to a crosswind distance increment of 107.3 meters for the October 1967 series (40 mps) and 134.1 meters for the April 1969 and October 1969 series (50 mph). This change is reflected in the column headings.

In Tables 4 and 5, the SO_2 concentrations are net values obtained by subtracting the ambient SO_2 and CO_2 background. Completely zero flights are included in both tables to indicate the absence of ground-level concentrations.

Table 4. PEAK GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER

Symbols

EST : Time of beginning and end of each flight.

Begin : Location of flight beginning in whole degrees of azimuth and kilometers to nearest tenth from Keystone or Homer City stacks.

End : Location of flight terminus in whole degrees of azimuth and kilometers to nearest tenth from Keystone or Homer City stacks.

Distance etc. : Successive one-kilometer intervals downwind from plant centered on designated whole kilometer.

SO_2 in pphm : Peak SO_2 concentration in whole parts per hundred million per kilometer interval.

* : Indicates that SO_2 concentrations beyond 25 km are continued on last page of table.

- : Missing data.

Table 4. PEAK GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km																								
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Keystone Plume 20 October 1967																											
0816-0821	058°/16.1	058°/ 8.0								0	0	0	0	0	0	0	0	0									
0959-1006	058°/11.3	058°/ 4.8					0	0	0	0	0	0	0														
Keystone Plume 21 October 1967																											
0954-1001	080°/14.5	080°/ 4.8					5	7	9	11	6	5	4	4	4	4											
Keystone Plume 22 October 1967																											
0904-0913	160°/17.7	160°/ 4.8					0	3	5	4	5	4	3	2	3	1	1	1	3								
0914-0924	160°/ 4.8	160°/17.7					1	0	1	3	3	4	5	4	4	2	1	1	0								
0926-0934	160°/17.7	160°/ 6.4							4	3	2	2	1	0	0	0	2	2	1								
0950-0955	149°/ 4.8	149°/11.3					4	2	4	5	4	1	1														
0956-1000	149°/11.3	149°/ 6.4							1	1	1	0	0														
1001-1004	149°/ 4.8	149°/ 8.0					1	0	0	1																	
Keystone Plume 23 October 1967																											
0907-0913	053°/15.3	053°/ 6.4							0	0	0	0	0	0	0	0	0										
1016-1021	053°/12.9	053°/ 4.8					0	0	0	0	0	0	0	0													
1030-1037	053°/12.9	053°/ 3.2				0	0	0	0	0	0	0	0	0													
1056-1100	053°/ 9.7	053°/ 4.8					0	0	0	0	0																
1122-1130	019°/12.9	019°/ 3.2				7	7	6	5	7	4	6	11	4													
1131-1140	019°/ 4.8	019°/19.3					2	7	10	15	6	7	6	10	5	11	10	10	9	10	9						
1141-1151	019°/17.7	019°/ 4.8					0	0	15	7	11	14	11	14	11	10	9	10	6								
Keystone Plume 24 October 1967																											
0915-0922	014°/16.1	014°/ 6.4							0	0	0	0	0	0	0	0	0	0									
0948-0952	014°/ 0.0	014°/ 1.6		0	0	0	0	0	0	0																	
1008-1017	014°/ 1.6	014°/14.5		0	0	0	0	0	0	0	0	0	0	0	0	0											
1036-1045	014°/ 1.6	014°/16.1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
Keystone Plume 26 October 1967																											
0804-0811	066°/ 9.7	066°/ 0.0	0	0	0	0	0	0	0	0	0																
0811-0824	066°/ 0.0	066°/17.7	0	0	0	0	1	0	0	0	7	7	12	7	2	0	0	0	4								
0854-0905	066°/16.1	066°/ 2.4			2	5	2	9	9	0	0	1	0	0	0	0	1	1									

Table 4 (continued). PEAK GROUND-LEVEL SO_2 OBSERVATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Keystone Plume 26 October 1967 (continued)																											
0905-0909	066°/ 2.4	066°/ 9.7			0	0	0	0	0	0	0																
0919-0922	066°/ 4.8	066°/ 0.8	0	20	9	11	17																				
0922-0928	066°/ 0.8	066°/11.3	0	2	24	4	2	4	5	5	4	5	3														
0930-0937	066°/ 9.7	066°/ 0.8	1	16	64	11	15	6	5	11	10																
0951-0959	066°/11.3	066°/ 0.8	2	24	5	11	9	7	4	4	2	2	3														
1005-1010	066°/ 0.8	066°/11.3	1	1	2	2	9	9	8	14	7	6	6														
Keystone Plume 27 October 1967																											
0802-0811	340°/16.1	340°/ 4.8					0	0	0	0	0	0	0	0	0	0	0	0									
0904-0910	340°/16.1	340°/ 9.7										0	0	0	0	0	0	0									
0927-0937	340°/12.9	340°/ 0.8	0	0	0	6	0	0	0	0	0	0	0	0													
0951-0957	340°/ 9.7	340°/ 3.2				0	0	0	0	0	0																
1019-1024	340°/ 1.6	340°/ 9.7		0	5	1	4	2	2	2	4																
1024-1031	340°/ 9.7	340°/ 0.8	0	0	1	2	4	15	5	2	4																
1031-1033	340°/ 0.8	340°/ 4.8	1	0	0	6																					
Keystone Plume 28 October 1967																											
0818-0827	071°/16.1	071°/ 4.8					0	0	0	0	0	0	0	0	0	0	0	0									
1016-1020	071°/ 9.7	071°/ 1.6		0	0	0	0	0	0	0	0																
Keystone Plume 29 October 1967																											
0959-1004	315°/ 9.7	315°/ 1.6		0	0	0	0	0	0	0	0																
1032-1042	315°/17.7	315°/ 3.2				0	0	1	0	2	4	4	10	7	6	9	5	5	5								
1042-1053	315°/ 3.2	315°/22.5				0	0	0	1	1	1	6	10	12	12	7	4	10	9	7	4	4	2	1			
1053-1101	315°/22.5	315°/ 9.6										10	7	6	10	10	9	9	7	0	0	1	1	2			
1107-1110	315°/ 4.8	315°/ 1.6	31	1	10	11	22																				
Keystone Plume 30 October 1967																											
0806-0812	339°/ 9.7	339°/ 1.6		0	0	0	0	0	0	0	0																
0924-0929	339°/ 9.7	339°/ 2.4			0	0	0	0	0	0	0																
1000-1016	339°/22.5	339°/ 0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
1016-1028	005°/ 0.8	005°/22.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
1040-1052	005°/22.5	005°/11.3												0	0	0	0	0	0	0	0	0	0	0			

Table 4 (continued). PEAK GROUND-LEVEL SO_2 OBSERVATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Keystone Plume 30 October 1967 (continued)																											
1201-1205	026°/ 3.2	026°/ 8.0				0	0	0	0	0																	
1210-1217	026°/11.3	026°/ 1.6		0	0	0	0	0	0	0	0	0	0														
Keystone Plume 31 October 1967																											
0842-0850	340°/16.1	340°/ 3.2				0	0	0	0	0	0	0	0	0	0	0	0	0									
0938-0949	351°/22.5	351°/ 9.7										0	0	0	0	0	0	0	0	0	0	0	0	0			
1024-1030	351°/ 0.8	351°/ 9.7	0	0	0	0	0	0	0	0	0																
1037-1043	021°/ 9.7	021°/19.3										0	0	0	0	0	0	0	0	0	0						
1129-1135	021°/ 9.7	021°/ 1.6		0	0	0	0	0	0	0	0																
Keystone Plume 8 April 1969																											
1001-1013	076°/16.0	076°/ 0.5	2	0	0	0	0	0	0	0	0	1	1	2	3	0	4	3									
1043-1047	092°/10.0	092°/ 4.0				7	12	11	7	7	4	5															
1052-1055	092°/ 4.0	092°/ 0.5	5	5	10	11																					
1055-1102	092°/ 0.5	092°/10.0	1	5	6	5	6	9	5	3	4	5															
1130-1141	099°/ 0.5	099°/20.0	0	0	4	4	5	4	3	1	1	1	0	2	5	2	3	4	4	5	4	3					
Keystone Plume 9 April 1969																											
0810-0821	328°/16.0	328°/ 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0959-1007	355°/16.0	355°/ 4.0				16	19	12	12	6	1	1	1	1	1	2	1	1									
1011-1015	355°/ 4.0	355°/ 0.5	6	15	19	12																					
1015-1025	355°/ 0.5	355°/16.0	0	1	0	0	0	6	5	5	5	5	4	5	5	2	2	1									
1037-1050	355°/16.0	355°/ 0.5	0	0	0	0	0	0	0	0	0	2	2	1	1	1	3	3									
1106-1114	355°/10.0	355°/ 0.5	31	97	26	24	1	10	10	17	11	16															
1340-1345	027°/10.0	027°/ 4.0				0	0	1	1	2	6	2															
1348-1352	027°/ 4.0	027°/ 0.5	3	2	29	33																					
1352-1402	027°/ 0.5	027°/16.0	1	9	6	20	1	0	1	0	0	1	2	3	3	3	1	0									
1402-1414	027°/16.0	027°/ 1.5		1	33	7	0	0	0	3	5	2	2	0	1	1	1	1									
1414-1418	027°/ 1.5	027°/ 7.5		0	0	6	14	25	7																		
1418-1424	027°/ 7.5	027°/ 0.5	162	65	39	10	0	14	10																		
1424-1428	027°/ 0.5	027°/ 5.5	7	7	10	10	7																				

Table 4 (continued). PEAK GROUND-LEVEL SO OBSERVATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Keystone Plume 10 April 1969																											
0834-0846	043°/16.0	043°/ 0.5	0	2	1	1	0	1	0	0	0	2	2	4	5	4	6	5									
0936-0941	036°/ 5.0	036°/ 0.5	1	0	4	3	9																				
1000-1020	043°/ 0.5	043°/32.0	0	1	1	1	1	1	2	2	4	5	5	5	4	1	1	4	5	4	5	1	1	1	6	5	3*
1020-1044	043°/32.0	043°/ 0.5	0	0	0	2	6	4	5	4	7	7	10	10	7	6	5	2	3	2	2	5	4	2	3	2	2*
1335-1340	062°/10.0	062°/ 4.0				5	7	7	5	9	6	10															
1343-1346	062°/ 4.0	062°/ 0.5	0	1	0	1																					
1356-1401	062°/ 0.5	062°/10.0	22	1	1	1	1	2	1	1	0	0															
1406-1414	091°/10.0	091°/ 0.5	5	25	19	9	14	15	5	6	6	5															
1414-1424	091°/ 0.5	091°/16.0	2	5	4	3	3	2	2	2	1	2	2	3	2	2	2	3									
Keystone Plume 11 April 1969																											
0951-1001	143°/16.0	143°/ 4.0				7	26	12	13	1	2	5	10	6	5	5	7	7									
1004-1007	143°/ 4.0	143°/ 0.5	0	0	0	2																					
1019-1041	143°/ 0.5	143°/38.0	0	0	0	2	2	5	2	4	2	1	2	2	2	9	7	6	6	5	2	2	2	2	5	7	5*
1041-1100	143°/38.0	143°/ 0.5	25	0	20	19	5	2	7	7	6	6	6	5	2	5	4	1	0	2	1	3	2	2	2	1	2*
1100-1106	143°/ 0.5	143°/10.0	0	9	0	0	5	2	4	2	0	0															
1106-1112	143°/10.0	143°/ 0.5	30	25	36	5	1	9	2	0	0	0															
1325-1331	143°/10.0	143°/ 0.5	18	16	6	4	2	7	7	6	6	5															
1331-1340	143°/ 0.5	143°/16.0	0	11	4	0	0	1	5	5	5	4	4	4	4	5	4	5									
1340-1351	143°/16.0	143°/ 0.5	0	14	2	9	7	6	1	2	2	2	2	4	5	5	4	4									
Keystone Plume 12 April 1969																											
0925-0937	250°/16.0	250°/ 0.5	1	10	24	20	20	22	1	9	10	12	12	16	14	10	9	11									
0943-0955	250°/ 0.5	250°/19.0	0	0	1	6	30	40	19	17	17	17	10	6	7	7	7	7	7	7	6						
0956-0958	250°/19.0	250°/16.0																1	1	2	4						
1003-1009	264°/16.0	264°/ 6.0						4	2	10	5	2	4	5	5	2	4	6									
1013-1016	269°/ 6.0	269°/ 0.5	6	25	56	22	33	21																			
1020-1023	269°/ 6.0	269°/ 0.5	0	14	21	40	29	25																			
1023-1036	269°/ 0.5	269°/24.0	0	0	15	15	32	26	20	15	14	10	9	11	6	5	4	8	6	5	5	2	3	4	4	3	
1036-1051	269°/24.0	269°/ 0.5	10	17	36	15	19	6	20	20	15	14	12	11	6	7	5	4	5	5	4	3	3	2	3	4	
1247-1252	269°/ 6.0	269°/ 0.5	144	33	9	12	8	8																			
1252-1255	269°/ 0.5	269°/ 6.0	144	65	41	11	17	15																			
1255-1300	269°/ 6.0	269°/ 0.5	2	2	21	15	14	5																			
1300-1307	269°/ 0.5	269°/14.0	1	10	17	5	5	7	10	7	5	5	5	1	1	1											
1307-1315	269°/14.0	269°/ 0.5	29	45	1	6	11	11	6	5	5	4	5	1	2	2											
1315-1320	269°/ 0.5	269°/ 6.0	0	36	21	5	2	6	10	10																	
1320-1324	269°/ 6.0	269°/ 0.5	4	11	15	6	2	5	10	10																	

Table 4 (continued). PEAK GROUND-LEVEL SO_2 OBSERVATIONS - HELICOPTER, pphm

			Distance downwind from plant, km																								
EST	Begin	End	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Keystone Plume 14 April 1969																											
0751-0758	358°/10.0	358°/ 0.5	0	0	0	0	0	0	0	0	0	0															
0910-0913	358°/10.0	358°/ 5.0					0	0	0	0	0	0															
0913-0916	358°/ 5.0	358°/10.0					0	0	0	0	0	0															
0925-0929	358°/10.0	358°/16.0										0	0	0	0	0	0	0									
0932-0936	358°/16.0	358°/10.0										0	0	0	0	0	0	0									
0944-0950	358°/10.0	358°/ 0.5	0	0	0	0	0	0	0	0	0	0															
Keystone Plume 17 April 1969																											
0809-0817	040°/16.0	040°/ 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0909-0919	040°/16.0	040°/ 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0940-0944	047°/10.0	047°/16.0										7	4	4	5	4	3	1									
0947-0959	053°/16.0	053°/33.0																20	14	11	11	7	6	3	2	5	5*
1007-1024	053°/33.0	053°/10.0										6	6	6	7	7	7	6	6	5	3	2	1	2	1	1	1*
1033-1040	053°/10.0	053°/ 0.5	73	18	40	36	20	16	20	10	21	6															
1040-1047	053°/ 0.5	053°/12.0	2	105	28	21	13	13	18	20	20	4	5	5													
1047-1055	053°/12.0	053°/ 0.5	0	10	14	21	23	21	8	20	20	8	5	5													
1055-1102	053°/ 0.5	053°/12.0	0	28	2	0	14	19	23	14	8	2	2	1													
1102-1110	053°/12.0	053°/ 0.5	0	11	24	34	43	1	6	11	8	8	2	2													
Keystone Plume 18 April 1969																											
0816-0826	020°/16.0	020°/ 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
Keystone Plume 28 April 1969																											
0755-0808	031°/16.0	031°/ 0.5	5	0	0	1	0	1	6	4	2	2	1	2	5	4	3	3									
0919-0926	031°/10.0	031°/ 0.5	6	1	0	0	0	0	0	0	0	0															
0957-1002	031°/ 0.5	031°/10.0	14	0	0	0	0	0	0	0	0	0															
1002-1009	031°/10.0	031°/ 0.5	0	1	7	3	5	0	0	0	0	0															
1009-1012	031°/ 0.5	031°/ 4.0	3	3	0	3																					
1012-1015	031°/ 4.0	031°/ 0.5	1	0	4	4																					
Keystone Plume 30 April 1969																											
0825-0832	214°/10.0	214°/ 0.5	0	0	0	0	2	12	11	0	0	0															
0839-0852	214°/ 0.5	214°/22.0	0	0	0	0	0	0	1	12	15	9	12	22	22	19	10	11	20	21	16	7	6	4			
0852-0900	214°/22.0	214°/10.0										4	5	5	7	22	21	14	11	7	11	4	3	4			

Table 4 (continued). PEAK GROUND-LEVEL SO_2 OBSERVATIONS - HELICOPTER, pphm

			Distance downwind from plant, km																								
EST	Begin	End	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Keystone Plume 30 April 1969 (continued)																											
0903-0910	214°/10.0	214°/ 0.5	1	4	5	9	6	6	11	11	9	6															
0921-0923	214°/ 0.5	214°/ 4.0	0	0	1	1																					
0926-0928	214°/ 4.0	214°/ 3.0			5	30																					
0928-0937	214°/ 3.0	214°/17.0			17	9	21	24	10	14	15	12	4	1	2	6	7	6	4								
0937-0949	214°/17.0	214°/ 0.5	1	4	1	21	17	16	10	6	9	10	11	5	4	1	3	4	4								
1025-1036	221°/ 0.5	221°/18.0	0	0	1	5	2	10	16	16	19	20	20	16	17	9	10	9	9	10							
1036-1038	221°/18.0	221°/16.0																9	10	9							
1041-1051	226°/16.0	226°/ 0.5	1	16	5	1	4	11	19	7	6	11	11	7	5	9	14	12									
1051-1102	214°/ 0.5	214°/16.0	0	1	10	12	6	11	21	31	31	22	6	9	10	5	4	9									
1107-1117	214°/16.0	214°/ 0.5	0	2	9	14	21	6	11	9	10	10	12	11	17	15	10	6									
Keystone Plume 1 May 1969																											
0717-0724	286°/16.0	286°/ 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0839-0847	322°/10.0	322°/ 0.5	17	5	9	12	5	7	6	1	2	0															
0847-0849	322°/ 0.5	322°/ 4.0	0	0	4	0																					
0851-0903	322°/ 4.0	322°/24.0				1	7	2	4	1	15	5	5	7	5	6	9	9	5	6	10	5	4	5	7	4	
0903-0912	322°/24.0	322°/10.0										7	5	4	4	5	4	4	5	5	4	4	4	2	2	2	
0918-0924	334°/10.0	334°/ 0.5	2	6	1	4	2	2	4	16	24	6															
0930-0939	322°/ 0.5	322°/16.0	0	0	1	11	16	10	15	19	19	19	16	16	11	5	4	2									
0946-0957	322°/16.0	322°/ 0.5	4	2	1	2	1	0	1	1	2	14	21	20	10	7	7	5									
1102-1108	322°/10.0	322°/ 0.5	0	1	1	2	2	2	3	4	4	1															
1108-1113	043°/ 0.5	043°/ 9.0	0	1	15	2	7	5	10	6	2																
1113-1118	043°/ 9.0	043°/ 0.5	1	22	15	9	7	7	4	3	2																
Keystone Plume 2 May 1969																											
0741-0751	060°/16.0	060°/ 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0908-0914	042°/10.0	042°/ 0.5	1	1	8	6	5	6	7	10	24	9															
0914-0924	042°/ 0.5	042°/16.0	1	2	1	2	6	11	5	6	6	9	20	10	6	5	4	2									
0929-0933	053°/16.0	053°/10.0										5	6	7	9	14	14	10									
0937-0943	023°/10.0	023°/ 0.5	0	1	2	2	2	9	9	19	20	27															
1009-1014	065°/10.0	065°/ 0.5	0	0	0	0	0	0	4	15	27	20															
1014-1019	009°/ 0.5	009°/10.0	0	1	1	4	5	7	6	10	10	9															
1034-1040	053°/10.0	053°/ 0.5	20	1	1	1	1	1	1	1	1	0															

Table 4 (continued). PEAK GROUND-LEVEL SO_2 OBSERVATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km																								
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Keystone Plume 3 May 1969																											
0639-0645	089°/10.0	089°/ 0.5	0	0	0	0	0	0	0	0	0	0															
0814-0825	075°/16.0	075°/ 0.5	0	0	0	0	0	0	0	1	3	5	4	3	3	1	1	1									
0858-0907	089°/16.0	089°/ 4.0				18	9	6	6	9	18	15	8	9	9	5	4	4									
0914-0917	089°/ 0.5	089°/ 4.0	3	15	16	13																					
0917-0920	089°/ 4.0	089°/ 0.5	35	30	9	5																					
0920-0925	089°/ 0.5	089°/10.0	3	20	23	14	18	9	9	9	9	9															
0933-0936	089°/10.0	089°/16.0										11	11	9	6	4	4	5									
0948-0954	089°/ 9.0	089°/ 0.5	0	5	3	6	6	8	16	13	9																
Keystone Plume 5 May 1969																											
0704-0715	262°/16.0	262°/ 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0826-0829	267°/10.0	267°/16.0										9	10	14	11	10	5	4									
0835-0840	267°/16.0	267°/24.0																9	11	12	11	14	11	9	9	10	
0840-0849	267°/24.0	267°/10.0										6	6	9	10	9	9	10	9	11	16	14	11	11	9	10	
0854-0857	277°/10.0	277°/ 4.0				11	14	15	17	21	24	16															
0900-0902	267°/ 4.0	267°/ 0.5	1	1	3	4																					
0919-0924	267°/ 0.5	267°/10.0	4	1	3	7	6	4	7	5	7	7															
0936-0940	267°/10.0	267°/ 4.0				4	5	6	4	5	5	6															
0942-0944	248°/ 4.0	248°/ 0.5	12	11	2	5																					
0944-0948	226°/ 0.5	226°/ 6.0	7	11	4	1	1	1																			
0948-0952	226°/ 6.0	226°/ 0.5	1	1	0	1	1	1																			
1200-1202	226°/ 0.5	226°/ 4.0	0	6	4	9																					
1205-1208	210°/ 4.0	210°/ 0.5	2	2	41	40																					
1208-1217	210°/ 0.5	210°/16.0	2	1	2	11	16	29	24	29	16	14	24	19	7	4	5	7									
1222-1233	210°/16.0	210°/ 0.5	2	76	54	16	16	20	19	20	11	15	14	16	9	8	6	6									
1233-1244	210°/ 0.5	210°/18.0	11	12	20	34	29	21	27	32	27	29	26	11	10	9	6	6	9	7							
1244-1255	210°/18.0	210°/ 0.5	9	70	54	12	11	16	4	5	12	10	17	14	9	6	5	4	7	6							
Keystone Plume 6 May 1969																											
0716-0722	201°/16.0	201°/ 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0948-0956	208°/ 0.5	208°/12.0	0	0	0	0	0	0	0	0	0	0	0	0													
0956-1004	208°/12.0	208°/ 0.5	0	0	0	0	0	0	0	0	0	0	0	0													
1205-1208	208°/ 4.0	208°/ 0.5	2	44	35	21																					
1208-1214	208°/ 0.5	208°/10.0	1	4	42	40	21	24	16	19	17	17															
1221-1227	208°/10.0	208°/20.0										16	16	16	15	11	10	7	9	9	9	9					

Table 4 (continued). PEAK GROUND-LEVEL SO_2 OBSERVATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km																								
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Keystone Plume 6 May 1969 (continued)																											
1227-1239	208°/20.0	208°/ 0.5	0	0	1	7	10	33	21	15	11	15	15	14	12	10	7	8	9	9	9	9					
1239-1247	186°/ 0.5	186°/12.0	1	1	4	15	14	31	41	32	14	7	7	6													
1247-1255	186°/12.0	186°/ 0.5	14	7	9	14	12	12	32	35	20	9	9	6													
Keystone Plume 7 May 1969																											
0702-0711	015°/16.0	015°/ 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0847-0853	044°/10.0	044°/ 4.0				0	0	0	0	0	1	0															
1109-1114	054°/ 0.5	054°/10.0	0	21	35	35	20	24	5	10	3	5															
1114-1120	054°/10.0	054°/ 0.5	3	50	23	6	14	13	11	19	10	10															
1120-1123	054°/ 0.5	054°/ 6.0	3	10	39	36	8	1																			
1123-1127	054°/ 6.0	054°/ 0.5	0	1	40	56	39	3																			
1127-1132	054°/ 0.5	054°/10.0	0	0	0	8	23	30	33	25	5	4															
1132-1139	054°/10.0	054°/ 0.5	0	1	11	25	1	13	19	23	9	4															
Keystone Plume 8 May 1969																											
0643-0650	008°/10.0	008°/ 0.5	0	0	0	0	0	0	0	0	0	0															
1146-1151	031°/10.0	031°/ 4.0				15	35	50	51	26	11	7															
1154-1157	031°/ 4.0	031°/ 0.5	0	0	1	2																					
1205-1210	031°/ 0.5	031°/10.0	0	0	0	1	1	1	1	5	11	1															
1215-1220	031°/ 8.0	031°/ 0.5	4	16	29	17	16	20	27	5																	
Keystone Plume 9 May 1969																											
0747-0751	045°/10.0	045°/ 4.0				1	1	1	2	1	1	1															
0753-0756	045°/ 4.0	045°/ 0.5	2	2	1	1																					
0802-0811	055°/ 0.5	055°/16.0	1	2	1	1	1	2	1	2	4	5	5	6	5	2	2	2									
1245-1250	064°/16.0	064°/10.0										6	5	5	9	6	9	9									
1254-1259	064°/10.0	064°/ 4.0				0	1	1	5	5	4	3															
1300-1304	055°/ 4.0	055°/ 0.5	2	14	5	33																					
1304-1306	055°/ 0.5	055°/ 4.0	2	6	15	3																					
1306-1310	055°/ 4.0	055°/ 0.5	7	68	26	9																					

Table 4 (continued). PEAK GROUND-LEVEL SO_2 OBSERVATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
			Keystone Plume 9 October 1969																								
0821-0830	053°/16.0	053°/ 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0923-0934	053°/16.0	053°/ 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0957-1003	078°/ 8.0	078°/18.0								0	0	0	0	0	0	0	0	0	0	0							
1009-1021	053°/16.0	053°/ 0.5	5	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0									
			Keystone Plume 10 October 1969																								
0813-0820	020°/16.0	020°/ 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0948-0952	020°/10.0	020°/16.0										0	1	1	1	2	4	4									
0952-1005	020°/16.0	020°/ 0.5	3	2	1	1	0	0	0	0	1	0	0	1	1	2	2	2									
			Homer City Plume 11 October 1969																								
0812-0824	010°/16.0	010°/ 0.5	0	0	0	0	0	0	0	2	4	4	1	1	2	1	0	0									
0925-0930	032°/16.0	032°/ 8.0								0	1	1	1	0	1	0	0	0									
0933-0939	022°/ 8.0	022°/ 0.5	0	0	0	1	1	1	1	0																	
1039-1048	040°/16.0	040°/ 4.0				0	0	0	1	1	1	1	0	0	1	0	0	0									
1100-1104	354°/ 4.0	354°/ 0.5	26	6	1	1																					
1115-1120	010°/ 0.5	010°/ 8.0	48	36	44	27	10	9	11	3																	
1126-1132	010°/ 8.0	010°/ 0.5	4	1	6	7	7	7	7	2																	
1132-1135	354°/ 0.5	354°/ 4.0	0	0	2	0																					
1138-1143	354°/ 4.0	354°/10.0				1	2	3	4	2	2	0															
1204-1216	010°/16.0	010°/ 0.5	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1									
			Homer City Plume 13 October 1969																								
0735-0742	348°/16.0	348°/ 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0851-0858	355°/10.0	355°/ 0.5	0	0	0	0	0	0	0	0	0	0															
0913-0922	355°/ 0.5	355°/16.0	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0									
0926-0935	002°/16.0	002°/ 4.0				0	0	0	0	0	0	0	0	0	0	0	0	0									
0937-0941	011°/ 4.0	011°/ 0.5	0	0	0	0																					
1051-1056	017°/16.0	017°/10.0										1	2	1	2	2	3	2									
1102-1107	014°/10.0	014°/ 4.0				1	4	4	2	1	1	2															
1111-1113	011°/ 4.0	011°/ 0.5	1	2	6	1																					
1125-1135	037°/ 0.5	037°/16.0	1	0	12	12	2	9	11	4	4	4	4	3	3	7	2	2									
1139-1152	037°/16.0	037°/ 0.5	30	33	9	10	21	7	11	7	2	5	5	2	2	3	2	2									
1152-1158	037°/ 0.5	037°/ 8.0	5	31	20	12	12	6	9	7																	

Table 4 (continued). PEAK GROUND-LEVEL SO_2 OBSERVATIONS - HELICOPTER, pphm

			Distance downwind from plant, km																								
EST	Begin	End	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Homer City Plume 13 October 1969 (continued)																											
1158-1203	037°/ 8.0	037°/ 0.5	1	2	6	7	11	5	9	7																	
1203-1205	037°/ 0.5	037°/ 2.5	10	130																							
1205-1206	037°/ 2.5	037°/ 0.5	73	62																							
1206-1215	037°/ 0.5	037°/16.0	2	72	44	19	6	2	5	1	1	3	1	1	1	1	2	1									
Homer City Plume 15 October 1969																											
0922-0931	203°/16.0	203°/ 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
1053-1101	247°/10.0	247°/ 0.5	42	31	28	16	1	0	0	2	4	5															
1101-1108	247°/ 0.5	247°/10.0	1	41	28	22	11	11	10	11	11	10															
1113-1122	247°/12.0	247°/ 0.5	12	50	14	10	6	0	1	1	1	2	2	3													
1122-1130	247°/ 0.5	247°/12.0	7	27	38	21	19	11	11	9	6	6	6	4													
1132-1137	247°/14.0	247°/20.0														4	4	3	2	2	2	1					
1137-1147	247°/20.0	247°/ 4.0				9	9	4	5	5	2	5	2	4	4	4	4	2	2	4	2	1					
1152-1156	272°/ 4.0	272°/ 0.5	55	19	20	10																					
1156-1201	272°/ 0.5	272°/ 6.0	6	35	7	21	9	4																			
1201-1205	272°/ 6.0	272°/ 0.5	9	76	12	9	6	4																			
1205-1211	272°/ 0.5	272°/ 8.0	0	17	56	10	15	14	7	3																	
1211-1217	272°/ 8.0	272°/ 0.5	0	0	28	12	4	4	4	2																	
Homer City Plume 17 October 1969																											
1103-1114	073°/10.0	073°/ 0.5	0	5	1	17	28	17	7	6	0	0															
Homer City Plume 18 October 1969																											
0902-0907	064°/16.0	064°/ 8.0								1	4	5	7	5	5	6	5	5									
1003-1009	052°/ 0.5	052°/10.0	139	157	37	6	19	23	21	10	10	9															
1017-1020	059°/10.0	059°/16.0										5	5	5	4	6	4	3									
1029-1041	059°/16.0	059°/ 0.5	0	0	15	2	1	1	1	2	4	4	5	4	4	4	4	4									
1041-1050	070°/ 0.5	070°/16.0	0	0	0	1	5	5	6	1	1	1	1	1	1	2	2	2									
1050-1104	070°/16.0	070°/ 0.5	5	11	21	26	17	0	1	6	6	5	2	1	1	1	3	3									
1104-1108	070°/ 0.5	070°/ 6.0	1	11	21	14	7	4																			
1108-1112	070°/ 6.0	070°/ 0.5	61	88	17	12	6	6																			
1112-1117	070°/ 0.5	070°/ 9.0	19	51	49	37	10	11	6	5	4																
1117-1126	070°/ 9.0	070°/ 0.5	21	4	2	4	7	6	9	1	4																

Table 4 (continued). PEAK GROUND-LEVEL SO_2 OBSERVATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km																								
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Homer City Plume 20 October 1969																											
0801-0813	040°/16.0	040°/ 0.5	12	1	2	0	1	1	2	1	2	5	3	5	4	2	1	0									
0813-0815	040°/ 0.5	040°/ 4.0	0	0	1	0																					
0815-0817	040°/ 4.0	040°/ 0.5	1	2	1	0																					
0945-0950	064°/16.0	064°/10.0										9	11	10	6	6	6	6									
0956-1003	054°/10.0	054°/ 0.5	5	1	2	2	11	19	8	9	7	5															
1003-1008	054°/ 0.5	054°/10.0	0	2	26	1	6	6	1	2	2	2															
1008-1016	054°/10.0	054°/ 0.5	1	6	22	9	6	7	10	4	5	4															
1016-1018	054°/ 0.5	054°/ 4.0	1	1	3	2																					
1018-1021	054°/ 4.0	054°/ 0.5	7	60	16	10																					
1036-1046	064°/ 0.5	064°/20.0	0	1	27	10	9	12	9	5	6	5	5	6	9	6	4	2	1	1	1	0					
1046-1102	054°/20.0	054°/ 0.5	12	55	39	27	6	6	9	10	4	4	5	4	4	5	2	2	2	2	2	1					
1102-1108	054°/ 0.5	054°/11.0	1	1	10	5	12	13	15	9	9	7	5														
1108-1117	054°/11.0	054°/ 0.5	3	24	46	5	9	11	7	9	8	6	4														
Homer City Plume 21 October 1969																											
0818-0830	086°/16.0	086°/ 0.5	31	127	0	2	2	5	4	4	7	2	4	2	4	5	5	3									
1036-1041	083°/ 0.5	083°/10.0	0	1	0	0	0	0	1	7	6	0															
1044-1048	083°/10.0	083°/16.0										0	1	0	0	0	0	0									
1048-1100	083°/16.0	083°/ 0.5	1	40	53	10	17	9	5	9	11	6	1	0	0	1	1	0									
1100-1107	083°/ 0.5	083°/14.0	0	1	1	0	5	7	6	6	4	3	3	1	0	0											
1107-1119	083°/14.0	083°/ 0.5	0	4	7	5	12	0	5	2	1	1	0	1	1	0											
Homer City Plume 24 October 1969																											
0936-0941	340°/ 8.0	340°/ 0.5	5	5	5	5	6	9	7	7																	
0952-1000	340°/ 0.5	340°/12.0	4	4	6	11	7	11	6	9	7	7	7	6													
1000-1007	340°/12.0	340°/ 0.5	4	5	12	17	9	10	16	20	9	9	6	6													
1007-1016	340°/ 0.5	340°/14.0	1	6	6	4	4	6	10	11	14	9	7	7	7	7											
1127-1132	021°/ 7.0	021°/ 0.5	11	20	30	11	7	12	2																		
1132-1144	013°/ 0.5	013°/16.0	0	0	11	7	2	3	9	12	11	10	21	7	7	7	7	6									
1144-1156	021°/16.0	021°/ 0.5	2	17	17	14	2	2	6	10	10	9	8	9	9	9	8	6									
1156-1201	037°/ 0.5	037°/ 6.0	0	1	14	15	27	14																			
1201-1205	037°/ 6.0	037°/ 0.5	2	4	11	22	25	14																			

Table 4 (continued). PEAK GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Keystone Plume 28 October 1969																											
0822-0829	163°/10.0	163°/ 0.5	0	0	0	0	0	0	0	0	0	0															
1014-1019	163°/16.0	163°/10.0										0	0	0	0	0	0	0									
1024-1028	121°/10.0	121°/ 4.0				0	0	0	0	0	0	0															
1031-1034	143°/ 4.0	143°/ 0.5	7	2	1	2																					
1044-1058	143°/ 0.5	143°/22.0	10	29	2	11	11	2	7	6	7	6	10	12	15	12	14	10	11	10	6	5	4	3			
1058-1109	143°/22.0	143°/10.0										12	12	9	7	7	7	7	7	6	6	4	4	2			
1118-1124	143°/10.0	143°/ 0.5	5	2	12	14	8	12	7	9	3	3															
1124-1130	143°/ 0.5	143°/10.0	1	2	10	10	11	6	5	3	3	5															
1130-1136	143°/10.0	143°/ 0.5	19	30	4	5	1	1	4	4	5	5															
1148-1158	139°/ 0.5	139°/20.0	0	0	1	6	27	15	5	2	1	2	2	2	0	0	1	0	0	0	0	0					
Keystone Plume 29 October 1969																											
0806-0812	268°/10.0	268°/ 0.5	0	0	0	0	0	0	0	0	0	0															
0911-0921	277°/ 0.5	277°/16.0	0	0	0	0	0	0	2	4	6	1	0	0	1	1	1	1									
0928-0933	277°/16.0	277°/10.0										4	5	5	5	6	6	5									
0938-0943	273°/10.0	273°/ 4.0				1	7	14	11	12	16	19															
0946-0949	257°/ 4.0	257°/ 0.5	1	2	2	2																					
0949-1009	273°/ 0.5	273°/28.0	0	0	0	1	2	3	14	17	20	26	22	15	12	15	16	20	16	23	23	20	19	20	14	10	11*
1009-1023	273°/28.0	273°/10.0										6	9	10	9	5	6	9	12	12	17	17	19	19	18	12	10*
1029-1036	268°/10.0	268°/ 0.5	0	3	10	10	11	4	10	11	12	12															
1036-1045	268°/ 0.5	268°/12.0	0	0	1	6	8	10	11	11	12	14	12	7													
1045-1054	268°/12.0	268°/ 0.5	0	0	4	20	10	11	13	12	11	12	10	6													
1153-1159	263°/ 0.5	263°/10.0	0	15	16	14	1	5	13	15	10	12															
1206-1213	257°/10.0	257°/ 0.5	0	22	25	17	26	19	16	10	12	11															
1213-1220	257°/ 0.5	257°/10.0	0	0	10	17	9	16	24	17	16	11															
1220-1228	257°/10.0	257°/ 0.5	5	4	4	14	16	17	16	14	14	11															
Keystone Plume 30 October 1969																											
0836-0845	325°/16.0	325°/ 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
Keystone Plume 31 October 1969																											
0804-0811	327°/10.0	327°/ 0.5	0	0	0	0	0	0	0	0	0	0															
0939-0949	316°/10.0	316°/ 0.5	10	66	1	5	7	9	4	1	1	1															
0949-0957	327°/ 0.5	327°/12.0	12	17	27	7	0	5	7	6	5	5	4	3													
0957-1000	327°/12.0	327°/10.0										4	5	3													

Table 4 (continued). PEAK GROUND-LEVEL SO_2 OBSERVATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Keystone Plume 31 October 1969 (continued)																											
1010-1015	334°/10.0	334°/ 4.0				4	8	5	5	2	4	7															
1020-1023	334°/ 4.0	334°/ 0.5	0	0	0	1																					
1023-1029	327°/ 0.5	327°/10.0	1	2	2	4	1	1	1	1	2	2															
1029-1037	334°/10.0	334°/ 0.5	15	3	6	4	1	2	5	5	5	4															
Keystone Plume 1 November 1969																											
0845-0852	329°/10.0	329°/ 0.5	0	0	0	0	0	0	0	0	0	0															
Homer City Plume 4 November 1969																											
0837-0845	124°/10.0	124°/ 0.5	22	20	2	16	15	11	2	5	8	2															
0845-0850	124°/ 0.5	124°/10.0	3	2	4	6	11	9	8	2	2	2															
0850-0858	124°/10.0	124°/ 0.5	4	5	19	11	3	5	7	2	3	3															
1035-1040	124°/ 0.5	124°/10.0	0	0	0	1	1	2	0	1	1	1															
1046-1053	132°/10.0	132°/ 0.5	1	1	2	5	0	1	1	1	2	1															
1053-1103	136°/ 0.5	136°/10.0	1	1	1	0	2	2	2	2	3	2	2	0	0	1	1	2	1	1							
1103-1117	136°/10.0	136°/ 0.5	2	2	1	20	12	12	5	9	0	1	1	2	2	1	0	0	1	1							
1117-1127	142°/ 0.5	142°/20.0	1	1	1	7	0	1	6	2	5	7	6	4	6	5	4	4	3	2	2	1					
1127-1134	142°/20.0	142°/10.0										1	1	1	1	0	0	1	1	2	2	1					
1137-1144	142°/10.0	142°/ 0.5	1	3	1	2	5	6	1	1	2	1															

Table 4 (continued). PEAK GROUND-LEVEL SO_2 OBSERVATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km																							
			26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
									Keystone Plume 10 April 1969																		
1000-1020	043°/ 0.5	043°/32.0	*5	2	3	4	4	4	2																		
1020-1044	043°/32.0	043°/ 0.5	*3	2	2	2	4	1	1																		
									Keystone Plume 11 April 1969																		
1019-1041	143°/ 0.5	143°/38.0	*3	2	4	4	3	4	3	4	3	3	2	2	1												
1041-1100	143°/38.0	143°/ 0.5	*4	4	4	3	2	3	2	3	4	5	2	2	1												
									Keystone Plume 17 April 1969																		
0947-0959	053°/16.0	053°/33.0	*6	1	5	6	6	2	1	0																	
1007-1024	053°/33.0	053°/10.0	*0	1	0	1	1	0	0	0																	
									Keystone Plume 29 October 1969																		
0949-1009	273°/ 0.5	273°/28.0	*6	6	6																						
1009-1023	273°/28.0	273°/10.0	*5	6	7																						

Table 5. INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER

Symbols

EST : Time of beginning and end of each flight.

Origin : Location of rectangular origin in whole degrees of azimuth and kilometers to nearest tenth from Keystone or Homer City stacks.

Dir : +y indicates counterclockwise direction around stacks; -y indicates clockwise direction.

Distance, etc. : Cumulative distance across plume from origin in whole meters. Thousands digit is not indicated.

SO_2 in pphm : Instantaneous SO_2 concentration in whole parts per hundred million per 6-second flight interval.

* : Indicates that SO_2 concentrations beyond 3353 meters are continued on last page of table.

- : Missing data.

Table 5. INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Origin	Dir	Distance across plume, m																									
			0	107	215	322	429	537	644	751	858	966	073	180	288	395	502	610	717	824	931	039	146	253	361	468	575	683
			Keystone Plume 27 October 1967																									
0914-0916	080°/ 4.8	-y	12	11	7	5	6	6	4	6	7	1	1	0														
		+y	12	11	5	2	1	0																				
0920-0922	080°/ 6.4	+y	11	9	5	4	5	5	2	0																		
		-y	11	7	5	1	0																					
0926-0928	080°/ 8.0	-y	6	6	4	6	1	1	0																			
		+y	6	6	4	4	5	4	3	2	0	1	0															
0930-0932	080°/ 9.7	+y	7	6	6	6	4	4	3	3	3	3	2	2	0													
		-y	7	5	4	3	2	1	0																			
0936-0938	080°/11.3	-y	6	5	4	4	3	4	1	0																		
		+y	6	5	5	4	3	2	1	1	0																	
0943-0947	080°/12.9	+y	5	4	4	3	3	3	3	3	4	3	1	1	0													
		-y	5	4	4	2	2	2	2	2	2	2	1	1	1	2	2	1	0									
			Keystone Plume 31 October 1967																									
0951-0954	351°/ 9.7	-y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

EST	Origin	Dir	Distance Across Plume (m), SO_2 in pphm																									
			0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
			Keystone Plume 8 April 1969																									
0957-0959	076°/16.0	-y	1	1	1	2	1	0	0	0	2	2	3	3	1	0												
		+y	1	0																								
1035-1039	092°/10.0	+y	5	4	4	5	4	4	4	4	5	4	4	4	4	4	3	3	3	3	3	3	3	3	3	0		
		-y	5	6	6	6	6	9	8	8	8	8	8	6	5	4	4	3	3	3	3	2	2	0				
1049-1051	092°/ 4.0	-y	3	3	1	0																						
		+y	3	3	10	5	5	4	4	3	3	1	1	1	0													
			Keystone Plume 9 April 1969																									
1008-1010	355°/ 4.0	+y	1	4	2	2	1	0																				
		-y	1	11	11	12	19	17	16	4	0																	

Table [illegible] (continued). INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

			Distance across plume, m																								
EST	Origin	Dir	0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
Keystone Plume 9 April 1969 (continued)																											
1032-1035	355°/16.0	-y	1	1	1	0	1	1	1	0	1	0															
		+y	1	1	0	0	1	0																			
1102-1104	355°/10.0	-y	2	0	2	4	4	1	2	1	0	5	6	1	0												
		+y	2	9	2	9	15	9	4	1	2	2	0														
1334-1337	027°/10.0	+y	1	1	1	1	0	0	1	1	1	0															
		-y	1	1	1	1	1	1	1	1	1	1	0														
1346-1348	027°/ 4.0	-y	0	0	0	0	0	0	0	0	0	0	0														
		+y	0	0	0	0	0	0	0	0	0	0	0														
Keystone Plume 10 April 1969																											
1331-1333	062°/10.0	-y	5	5	6	6	7	9	4	1	0																
		+y	5	7	9	6	6	6	5	1	1	0															
1341-1342	062°/ 4.0	-y	6	7	4	0	1	5	1	1	0																
		+y	6	7	4	3	2	4	2	0																	
Keystone Plume 11 April 1969																											
0943-0947	143°/16.0	+y	1	2	2	2	2	2	2	2	2	2	2	2	0												
		-y	1	1	2	1	1	2	2	2	1	1	0	2	1	0											
1002-1004	143°/ 4.0	-y	1	1	1	0																					
		+y	1	2	2	2	2	2	1	2	0																
1321-1323	143°/10.0	+y	5	9	5	5	4	5	1	2	0																
		-y	5	6	4	4	4	4	4	4	3	0															
Keystone Plume 12 April 1969																											
0920-0923	250°/16.0	-y	10	10	10	11	14	9	5	4	4	4	3	2	1	0											
		+y	10	11	11	10	9	7	6	6	6	4	1	0													
0959-1001	264°/16.0	+y	5	4	4	2	2	2	1	0	4	2	2	2	2	1	0										
		-y	5	5	5	5	4	4	2	2	2	2	2	4	2	3	2	2									
1009-1011	269°/ 6.0	+y	17	16	20	20	20	22	25	12	10	0															
		-y	17	17	17	21	20	6	7	10	9	9	6	2	0												

Table 5 (continued). INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Origin	Dir	Distance across plume, m 0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
												Keystone Plume 14 April 1969																
0906-0908	358°/10.0	+y	0	0	0	0	0	0	0	0	0	0	0	0	0													
		-y	0	0	0	0	0	0	0	0	0	0	0	0	0													
0916-0920	358°/10.0	+y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
		-y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0929-0931	358°/16.0	+y	0	0	0	0	0	0	0	0	0																	
		-y	0	0	0	0	0	0	0	0	0																	
												Keystone Plume 17 April 1969																
0937-0939	047°/10.0	-y	5	2	2	3	4	4	2	2	3	5	4	2	2	2	0											
		+y	5	9	11	7	11	5	1	0																		
0944-0945	053°/16.0	-y	11	11	10	9	2	1	0																			
		+y	11	12	12	10	1	0																				
1001-1004	053°/33.0	-y	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0								
		+y	1	1	1	1	1	1	1	0																		
1029-1031	053°/10.0	-y	10	11	11	10	11	12	12	9	4	0																
		+y	10	11	10	10	9	6	10	5	6	4	4	9	8	6	6	4	0									
												Keystone Plume 28 April 1969																
0916-0918	031°/10.0	+y	0	0	0	0	0	0	0	0	0	0																
		-y	0	0	0	0	0	0	0	0	0	0																
												Keystone Plume 30 April 1969																
0901-0903	214°/10.0	+y	6	7	5	5	4	4	4	7																		
		-y	6	6	6	6	6	6	6	6	6	5	5	4														
0924-0926	214°/ 4.0	+y	16	10	6	5	4	5	6	6	0																	
		-y	16	16	20	11	9	4	4	7	3	2	0															
1038-1040	226°/16.0	+y	11	12	11	12	14	11	11	10	7	6	7	7	8	7												
		-y	11	12	11	11	11	10	9	7	6	6	4	2	1	0												
1102-1105	214°/16.0	-y	9	9	9	9	9	11	15	11	10	10	11	10	10	10	8	4	3	0								
		+y	9	9	9	9	9	9	9	7	7	7	7	7	7	9	9	4	4	0								

Table 5 (continued). INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Origin	Dir	Distance across plume, m																									
			0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
										Keystone Plume 1 May 1969																		
0849-0850	322°/ 4.0	+y	1	2	2	1	0																					
		-y	1	1	0																							
0914-0916	334°/10.0	+y	6	5	5	4	3	3	4	4	5	5	4	4	4	4	4	3	4	4	3							
		-y	6	7	6	6	6	5	9	10	15	12	7	4	4	5	6	1	0									
0940-0944	322°/16.0	+y	6	6	7	5	5	5	5	5	5	5	4	4	2	1	0											
		-y	6	6	6	7	7	7	7	10	10	10	9	9	9	9	9	3	9	9	7	4	4	4	2	2	2	0
1043-1050	322°/ 4.0	-y	6	6	5	5	5	5	6	6	5	4	3	6	6	11	10	10	11	10	12	14	15	10	12	9	9	9*
		+y	6	3	5	5	5	5	2	5	6	2	4	5	5	5	6	6	10	8	6	6	7	7	4	4	4	3*
1055-1058	322°/10.0	+y	4	4	4	4	4	4	5	5	5	5	5	5	4	4	2	2	2	2	3	2	1	1	0			
		-y	4	4	4	4	4	4	4	2	1	1	1	0														
										Keystone Plume 2 May 1969																		
0905-0906	038°/10.0	+y	7	7	6	5	10	5	2	1	0																	
		-y	7	7	5	3	3	3	3	3	3	2	0															
0924-0927	053°/16.0	+y	5	6	6	4	5	5	5	5	5	5	5	5	5	5	4	4										
		-y	5	6	7	7	6	7	9	6	6	6	7	7	5	4	2	2	2									
0934-0936	023°/10.0	-y	7	10	7	6	5	5	4	5	5	5	5	5	5	5	5	5	5	5								
		+y	7	10	9	10	11	11	12	15	15	14	17	17	16	9	10	6	2	0								
0952-0955	023°/ 4.0	-y	2	2	3	2	1	1	1	1	1	1	2	2	2	2	2	5	5	2	2	2						
		+y	2	4	4	4	3	2	3	3	5	6	5	5	5	5	4	3	2	2	2	1	0					
1000-1004	065°/10.0	+y	9	12	15	19	13	15	13	17	10	10	12	6	6	5	6	6	6	6	6	6	6	6	6	6	7	9*
		-y	9	7	10	16	21	17	15	20	29	25	17	14	7	7	6	7	2	1	1	1	0					
1024-1032	053°/10.0	+y	6	6	6	9	8	8	5	6	6	7	10	8	8	7	7	5	5	5	4	2	2	2	2	2	2	2*
		-y	6	4	7	9	6	5	7	9	10	12	7	7	7	7	6	6	6	6	7	8	7	7	7	7	5	7*
										Keystone Plume 3 May 1969																		
0851-0856	089°/16.0	+y	3	3	3	2	3	3	3	3	3	3	3	2	2	2	2	2	2	2	1	1	1	1	1	1	0	
		-y	3	3	3	3	3	3	3	4	4	3	3	4	3	3	3	3	3	3	3	3	3	3	3	1	1	1*
0908-0910	089°/ 4.0	-y	9	9	10	11	9	6	4	3	3	3	3	3	1	0												
		+y	9	11	13	13	12	11	10	8	4	3	3	2	1	0												
0927-0931	089°/10.0	+y	8	8	7	6	6	5	5	5	5	4	4	3	3	3	2	0										
		-y	8	8	8	9	10	11	17	18	18	16	11	9	8	10	10	6	4	4	3	0						
0937-0940	089°/16.0	+y	9	8	8	7	7	7	7	7	5	4	4	4	3													
		-y	9	8	9	11	9	9	8	8	6	5	4	5	4	3	3	1	0									

Table 5 (continued). INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

			Distance across plume, m																									
EST	Origin	D r	0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
Keystone Plume 5 May 1969																												
0824-0825	267°/10.0	-y	4	1	1	1	0																					
		+y	4	11	6	1	0																					
0831-0833	267°/16.0	-y	9	11	11	9	5	5	2	0																		
		+y	9	10	10	10	9	6	6	6	6	5	5	5	5	5	2	1	0									
0851-0853	277°/10.0	+y	9	9	5	4	4	4	2	2	2	1	0															
		-y	9	10	12	11	14	12	7	4	4	2	0															
0858-0859	267°/ 4.0	-y	6	4	1	1	0																					
		+y	6	5	2	1	0																					
0932-0935	267°/10.0	+y	4	5	3	2	2	2	2	2	0																	
		-y	4	5	6	7	6	6	5	4	4	2	0															
0940-0942	248°/ 4.0	-y	6	10	4	5	4	3	2	0																		
		+y	6	2	1	1	0																					
1203-1205	210°/ 4.0	+y	16	21	26	14	10	2	0																			
		-y	16	29	36	37	10	7	6	6	5	4																
1217-1219	210°/16.0	+y	6	5	6	7	6	6	6	4	5	6	4	4	4	2	2	4										
		-y	6	10	6	6	6	6	6	7	6	6																
Keystone Plume 6 May 1969																												
1202-1205	208°/ 4.0	+y	20	19	19	26	17	10	6	7	5	4	2	2	3	0												
		-y	20	21	21	24	21	16	10	9	7	4	2	2	1	0												
1216-1219	208°/10.0	-y	17	17	16	16	15	14	14	12	12	11	9	9	8	11	5	5	5	5	5	4						
		+y	17	18	18	17	17	16	16	16	16	16	15	10	10	7	7	9	6	4	4	3						
Keystone Plume 7 May 1969																												
0841-0845	044°/10.0	-y	0	0	0	0	0	0	0	0	0	0	0	0	0													
		+y	0	0	0	0	0	0	0	0	0	0	0	0	0													
1100-1102	054°/10.0	-y	14	11	12	11	11	10	11	10	5	5	3	0														
		+y	14	13	15	11	13	10	8	8	8	6	4	3	4	3	2	0										
Keystone Plume 8 May 1969																												
1143-1145	031°/10.0	-y	9	6	5	6	4	2	0																			
		+y	9	9	7	9	7	9	7	4	1	0																
1153-1154	031°/ 4.0	-y	6	1	0																							
		+y	6	6	6	1	0																					

Table 5 (continued). INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

			Distance across plume, m																									
EST	Origin	Dir	0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
Keystone Plume 8 May 1969 (continued)																												
1212-1214	031°/10.0	+y	1	1	2	2	2	4	1	0																		
		-y	1	1	1	1	1	1	0																			
Keystone Plume 9 May 1969																												
0744-0746	045°/10.0	-y	1	1	0																							
		+y	1	1	1	0																						
0752-0753	055°/ 4.0	+y	2	5	2	0																						
		-y	2	7	2	1	0																					
0818-0820	055°/16.0	+y	2	2	1	1	1	1	1	1	0																	
		-y	2	4	4	3	2	2	1	0																		
1242-1244	064°/16.0	-y	3	2	2	2	2	1	2	2	1	1	0															
		+y	3	4	5	5	5	5	5	5	5	4	4	3	1	1	0											
1251-1253	064°/10.0	+y	4	4	4	4	3	1	1	1	0																	
		-y	4	3	3	2	2	1	1	1	1	0																
1259-1300	055°/ 4.0	-y	1	1	1	1	0																					
		+y	1	9	4	1	0																					
Keystone Plume 9 October 1969																												
0920-0922	053°/16.0	-y	0	1	1	1	1	1	1	0	1	1	1	0														
		+y	0	1	1	0																						
1004-1008	053°/16.0	+y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
		-y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
Keystone Plume 10 October 1969																												
0943-0947	020°/10.0	+y	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0											
		-y	0	0	0	0																						
Homer City Plume 11 October 1969																												
0930-0932	022°/ 8.0	-y	2	3	2	2	1	1	1	0																		
		+y	2	2	1	1	0																					
0951-0954	040°/16.0	+y	2	2	2	2	2	3	2	2	4	4	3	2	3	2	2	0										
		-y	2	3	3	2	2	2	2	2	1	1	0															

Table 5 (continued). INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Origin	Dir	Distance across plume, m																									
			0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
Homer City Plume 11 October 1969 (continued)																												
1057-1059	354°/ 4.0	-y	5	3	1	0																						
		+y	5	4	5	5	4	4	2	2	1	0																
1122-1124	010°/ 8.0	+y	2	1	1	1	1	1	1	1	1	1	0															
		-y	2	2	2	1	1	1	1	1	1	1	0															
1135-1137	354°/ 4.0	+y	1	4	1	1	0																					
		-y	1	1	0	1	0	0	1	1	0																	
1147-1150	010°/16.0	+y	1	1	1	1	1	1	1	1	0																	
		-y	1	1	1	1	1	1	1	1	1	0																
Homer City Plume 13 October 1969																												
0923-0924	002°/16.0	+y	1	1	1	1	0																					
		-y	1	1	1	0																						
0935-0936	011°/ 4.0	+y	1	1	1	0																						
		-y	1	0																								
1046-1048	017°/16.0	-y	4	4	3	3	3	4	4	5	1	1	1	2	2	2	2	2	2	2								
		+y	4	4	3	2	2	2	2	2	2	1	2	2	2	2	2	2										
1056-1058	014°/10.0	-y	2	2	2	3	3	4	4	4	5	5	4	4	1	0												
		+y	2	2	1	1	1	2	2	2	1	1	1	0														
1108-1110	011°/ 4.0	+y	2	1	1	1	0																					
		-y	2	2	2	4	1	0																				
1136-1138	037°/16.0	+y	2	2	2	2	1	0																				
		-y	2	2	2	2	3	3	1	1	1	1	0															
Homer City Plume 15 October 1969																												
1048-1050	247°/10.0	-y	5	7	9	7	7	6	2	1	1	2	1	1	1	1	0											
		+y	5	5	5	5	5	5	5	4	3	2	2	2	2	1	1	0										
1149-1151	272°/ 4.0	-y	9	7	10	10	5	5	5	2	4	4	2	1	1	0												
		+y	9	9	7	5	5	4	3	3	3	4	1	0														
Homer City Plume 18 October 1969																												
0855-0858	064°/16.0	+y	6	6	6	6	6	5	5	5	5	5	4	4	3	2	2	2	2	2	2	2	0					
		-y	6	6	6	5	5	5	5	5	4	3	3	4	3	3	4	3	3	3	2	1	0					

Table 5 (continued). INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

			Distance across plume, m																									
EST	Origin	Dir	0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
			Homer City Plume 18 October 1969 (continued)																									
1012-1015	059°/10.0	+y	5	5	4	1	1	1	1	1	0																	
		-y	5	6	9	7	6	6	4	2	3	3	2	2	2	4	2	2	2	2	1	0						
1023-1025	059°/16.0	-y	2	2	1	1	1	1	2	2	2	1	1	1	1	1	1	1	0									
		+y	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	0									
			Homer City Plume 20 October 1969																									
0757-0800	045°/16.0	+y	2	2	3	4	4	4	4	4	3	4	3	2	1	1	1	1	0									
		-y	2	2	2	2	2	2	3	1	1	0																
0942-0944	064°/16.0	+y	6	6	5	3	2	2	1	1	1	1	1	1	1	1	1	1	0									
		-y	6	6	6	7	7	7	7	6	4	2	1	1	1	1	1	0										
0952-0954	054°/10.0	+y	9	7	6	6	5	5	4	4	2	0																
		-y	9	7	7	7	5	4	4	2	1	1	1	0														
			Homer City Plume 21 October 1969																									
1042-1043	083°/10.0	+y	0	0	0																							
		-y	0	1	1	2	1	1	0																			
			Homer City Plume 24 October 1969																									
0839-0842	294°/16.0	+y	1	1	1	1	1	1	2	2	2	1	4	4	4	1	0											
		-y	1	1	1	1	2	1	1	1	1	2	2	1	1	1	1	0										
0932-0935	340°/ 8.0	-y	7	7	7	7	7	6	5	5	5	5	4	2	2	2	1	1	1	0								
		+y	7	7	6	6	5	5	5	5	5	4	5	5	5	5	5											
			Keystone Plume 28 October 1969																									
1007-1013	143°/16.0	+y	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1*
		-y	1	1	2	2	2	2	2	1	1	1	1	1	1	1	1	1	2	1	2	2	2	3	3	3	3	4*
1020-1023	143°/10.0	-y	15	16	10	9	8	9	10	10	12	5	2	2	1	2	0											
		+y	15	16	11	10	10	7	8	9	5	4	4	4	4	3	2	1	1	1	1	1	1	1	0			
1029-1030	143°/ 4.0	+y	1	1	1	0																						
		-y	1	1	1	2	4	0																				
1112-1114	143°/10.0	-y	5	7	8	10	9	7	10	7	1	1	0	1	1	1	0											
		+y	5	5	5	5	5	5	5	6	5	2	2	2	2	1	1	0										

Table 5 (continued). INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Origin	Dir	Distance across plume, m																									
			0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
			Keystone Plume 29 October 1969																									
0924-0926	277°/16.0	-y	5	5	5	4	2	2	1	1	1	1	0															
		+y	5	5	4	3	2	2	2	2	2	2	2	2	2	2	1	1	0									
0935-0936	273°/10.0	-y	5	3	2	2	2	2	1	0																		
		+y	5	4	5	3	2	2	2	1	0																	
0944-0945	257°/ 4.0	-y	2	1	1	0																						
		+y	2	4	2	1	0																					
1025-1027	268°/10.0	-y	4	10	11	9	10	5	2	1	1	0																
		+y	4	3	3	3	2	2	1	1	1	0																
1201-1204	257°/10.0	-y	11	11	14	14	14	12	11	11	6	2	1	1	2	1	0											
		+y	11	10	9	10	10	10	6	6	7	7	6	6	5	3	1	2	1	0								
			Keystone Plume 31 October 1969																									
0934-0936	316°/10.0	+y	2	2	2	3	3	3	3	3	2	2	1	0	1	1	1	0										
		-y	2	2	2	2	2	2	2	1	1	1	1	2	1	2	1	1	0									
1002-1006	334°/10.0	+y	2	2	3	4	5	5	6	5	5	4	2	2	2	2	2	1	1	2	2	2	1	1	1	1	1	0
		-y	2	4	2	2	1	0																				
1017-1018	334°/ 4.0	-y	14	2	0																							
		+y	14	9	9	5	4	4	4	2	1	1	0															
			Homer City Plume 6 November 1969																									
1043-1044	132°/10.0	+y	1	1	1	1	1	0																				
		-y	1	1	1	1	1	1	1	1	2	1	1	0														
1134-1136	132°/10.0	+y	2	2	1	1	0																					
		-y	2	2	1	1	0																					

Table 5 (continued). INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Origin	Dir	Distance across plume, m 487	621	755	889	023	157	291	425	559	694	828	962	096	230	364	498	632	766	900	035	169	303	437	571	705	839
Keystone Plume 1 May 1969																												
1043-1050	322°/ 4.0	-y	*12	10	8	4	1	3	1	2	0																	
		+y	* 9	9	11	10	15	14	12	10	11	10	10	0														
Keystone Plume 2 May 1969																												
1000-1004	065°/10.0	+y	* 7	7	7	10	11	11	10	7	9	8	7	7	9													
1024-1032	053°/10.0	+y	* 2	3	2	2	1	2	1	2	1	1	0															
		-y	*10	14	13	19	20	21	21	24	22	15	12	13	10	7	5	2	1	1	1	0						
Keystone Plume 3 May 1969																												
0851-0856	089°/16.0	-y	* 1	1	1	0																						
Keystone Plume 28 October 1969																												
1007-1013	143°/16.0	+y	* 0	0	0	0	1	1	0																			
		-y	* 4	4	4	4	4	4	5	5	4	2	1	1	0													

GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

The ground-level SO_2 concentrations measured by portable bubblers are summarized in Table 7. Data are arranged by series day with each bubbler heading containing its identification, coordinates, and height above stack base elevation. Also included in the heading is a three-letter code describing the terrain, vegetation, and ground cover in the vicinity of the sampling site. Descriptions corresponding to this code are presented in Table 6.

Because of occasional malfunctions, some sampling periods were shorter or longer than 30 minutes; this was considered in the reduction and actual sampling times are listed as such. Caution should be exercised in interpreting the bubbler concentrations, since no compensation was made for background SO_2 levels.

Table 6. BUBBLER SITE DESCRIPTION

Terrain

A - Ridgetop perpendicular to plume

B - Hillside perpendicular to plume - windward side

C - Hillside perpendicular to plume - leeward side

D - Valley floor perpendicular to plume

E - Ridgetop parallel to plume

F - Hillside parallel to plume

G - Valley floor parallel to plume

H - Flatland

Ground Cover

M - Clear - no trees

N - Trees overhead with leaves

O - Trees overhead without leaves

P - Tall grass or bushes more than 8 inches high

Q - Short grass less than 8 inches high

R - Dirt or sand

S - Rocks

T - Snow

Table 7. AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Symbols

Bubbler heading : 1. Individual bubbler identification.
2. Height in whole meters above stack base elevation (SBE) of bubbler sampling site.
3. Description of terrain, vegetation, and ground-cover in the vicinity of sampling site.
4. Location of bubbler in whole degrees of azimuth and kilometers to nearest tenth from Keystone or Homer City stacks.

EST : Time of beginning and end of each sample.

pphm : Average SO_2 concentration during sampling period in whole parts per hundred million.

- : Missing data.

Table 7. AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Keystone Plume 20 October 1967

G-36 95 SBE BNQ 055/6.4		G-25 65 SBE DMP 059/6.4		G-16 65 SBE DNQ 061/6.5		G-1 55 SBE DMQ 067/6.7		G-26 35 SBE DMQ 070/6.8		G-27 60 SBE CNQ 062/7.6		G-6 105 SBE CNQ 068/7.8	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0817-47	15	0822-52	3	0826-56	12	0836-06	18	0839-09	16	0850-20	16	0855-25	7
0847-17	11	0852-22	13	0856-26	15	0906-36	14	0909-39	20	0920-50	9	0925-55	18
0917-47	7	0922-52	17	0926-56	12	0936-06	11	0939-09	16	0950-20	-	0955-25	15
0947-17	11	0952-22	23	0956-26	11	1006-36	11	1009-39	20	1020-50	13	1025-55	15

Keystone Plume 21 October 1967

G-1 35 SBE GNQ 072/10.0		G-6 60 SBE ANS 077/10.2		G-26 15 SBE DNP 081/10.7		G-27 5 SBE GMQ 086/10.8		G-25 30 SBE CMQ 089/11.8		G-16 75 SBE AMQ 084/12.1	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0757-27	14	0806-36	11	0811-41	4	0817-47	6	0825-55	7	0834-04	8
0827-57	11	0836-06	7	0841-11	4	0847-17	3	0355-25	4	0904-34	8
0857-27	11	0906-36	7	0911-41	4	0917-47	3	0925-55	3	0934-04	12
0927-57	7	0936-06	7	0941-11	8	0947-17	3				

Keystone Plume 22 October 1967

G-26 5 SBE DMQ 181/10.8		G-1 20 SBE DMQ 177/10.6		G-6 35 SBE DNQ 169/9.4		G-8 60 SBE DMQ 165/8.8		G-25 85 SBE CNQ 156/8.7		G-27 125 SBE ANQ 151/8.8	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0756-26	3	0801-31	4	0813-43	0	0821-51	2	0827-57	3	0830-00	2
0826-56	3	0831-01	4	0843-13	3	0851-21	4	0857-27	4	0900-30	3
0856-26	3	0901-31	4	0913-43	3	0921-51	3	0927-57	4	0930-00	0
0926-56	3			0943-13	3	0951-21	2	0957-27	3	1000-30	1

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Keystone Plume 23 October 1967

G-26 35 SBE CNQ 047/10.1		G-27 60 SBE DMQ 047/8.3		G-36 65 SBE BMQ 060/9.8		G-25 55 SBE DMQ 046/8.2		G-6 50 SBE DMQ 049/8.5		G-8 115 SBE EMP 056/9.1	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0749-19	8	0800-30	7	0810-40	2	0813-43	3	0818-48	-	0848-18	0
0819-49	-	0830-00	-	0840-10	-	0843-13	-	0848-18	3	0918-48	0
0849-19	-	0900-30	4	0910-40	4	0913-43	-	0918-48	4	0948-18	0
0919-49	4	0930-00	1	0940-10	4	0943-13	14	0948-18	-	1018-48	0
		1000-30	6			1013-43	7	1018-48	3		

Keystone Plume 24 October 1967

G-27 -5 SBE GMQ 024/7.5		G-8 10 SBE GMQ 015/6.1		G-6 95 SBE AOQ 035/7.9		G-25 60 SBE COQ 006/7.1		G-36 55 SBE DMQ 001/8.1		G-26 100 SBE EMQ 354/8.4	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0731-01	0	0747-17	0	0802-32	0	08[illegible]7-47	4	0824-54	-	0836-06	3
0801-31	0	0817-47	0	0832-02	0	08[illegible]-17	7	0854-24	0	0906-36	7
0831-01	0	0847-17	0	0902-32	0	0917-47	2	0924-54	4	0936-06	11
0901-31	0	0917-47	0	0932-02	0	0947-17	4	0954-24	0	1006-36	3
0931-01	0	0947-17	0	1002-32	7	1017-47	6	1024-54	2	1036-06	11
1001-31	0	1017-47	2	1032-02	0	1047-17	4	1054-24	0	1106-36	7

Keystone Plume 26 October 1967

G-26 60 SBE COQ 066/10.5		G-6 90 SBE EMQ 063/10.2		G-25 60 SBE DMQ 061/9.9		G-27 20 SBE AMP 057/9.4		G-36 65 SBE GOQ 052/9.0	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0822-52	4	0828-58	3	0833-03	3	0838-38	1	0846-10	-
0852-22	5	0858-28	1	0903-33	4	0938-38	1	0910-34	3
0922-52	5	0928-58	1	0933-03	2			0934-58	4
0952-22	4	0958-28	3	1003-33	2			0958-22	2
								1022-46	4
								1046-10	4

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Keystone Plume 27 October 1967

G-36 65 SBE		G-8 105 SBE		G-1 45 SBE		G-25 30 SBE		G-6 -- SBE		G-26 5 SBE		G-27 10 SBE	
AMQ 352/10.8		COQ 340/6.4		CNP 335/8.4		FMP 332/8.6		--- ---/---		DMQ 319/7.7		DOQ 326/7.7	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0733-03	1	0745-15	1	0755-34	8	0804-34	4	0813-50	0	0830-00	3	0836- 0946	3
0803-33	1	0815-45	3	0834-13	1	0834-04	4	0850-27	2	0900-30	4	0946- 1056	2
0833-03	3	0845-15	1	0913-52	1	0904-34	0	0927-04	2	0930-00	0		
0903-33	1	0915-45	1	0952-31	1	0934-04	4	1004-41	2	1000-30	2		
0933-03	5	0945-15	1	1031-10	1	1004-34	4	1041-18	1	1030-00	4		
1003-33	1	1015-45	1			1034-04	4			1100-30	2		

Keystone Plume 28 October 1967

G-26 90 SBE		G-1 55 SBE		G-27 50 SBE		G-25 30 SBE		G-6 65 SBE		G-36 10 SBE		G-8 10 SBE	
EMQ 063/10.2		DNQ 066/10.5		CMP 070/10.1		GMP 075/8.0		AMP 078/8.6		GMQ 089/8.7		GOQ 084/8.7	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0739-09	12	0746-16	-	0755-25	2	0802-32	2	0818-48	0	0830-00	1	0832-02	2
0809-39	18	0816-46	11	0825-55	1	0832-02	1	0848-18	1	0900-30	3	0902-32	2
0839-09	13	0846-16	3	0855-25	3	0902-32	1	0918-48	1	0930-00	3	0932-02	2
0909-39	3			0925-55	2	0932-02	3	0948-18	3	1000-30	2	1002-32	2

Keystone Plume 29 October 1967

G-27 40 SBE		G-36 25 SBE		G-6 70 SBE		G-8 70 SBE		G-25 10 SBE		G-1 10 SBE		G-26 -5 SBE	
COQ 289/10.3		DOQ 296/10.2		COQ 300/10.3		CMQ 304/11.1		DOQ 305/8.4		DMQ 299/8.3		CNR 294/8.4	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0742-12	-	0816-46	0	0822-52	0	0827-57	0	0842-12	0	0851-21	2	0903-33	1
0812-42	0	0846-16	0	0852-22	0	0857-27	0	0912-42	0	0921-51	1	0933-03	1
0842-12	0												

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Keystone Plume 30 October 1967

G-1 25 SBE DOQ 337/8.6		G-8 35 SBE BNP 332/8.6		G-36 100 SBE EMQ 354/8.3		G-27 60 SBE DMP 348/8.6		G-26 50 SBE DOQ 343/8.5		G-25 30 SBE DMP 341/8.5	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0802-47	0	0807-37	0	0812-42	0	0831-01	2	0836-06	2	0842-12	4
0847-32	0	0837-07	0	0842-12	0	0901-31	2	0906-36	1	0912-42	0
0932-17	0	0907-37	0	0912-42	0	0931-01	0	0936-06	2	0942-12	1
1017-02	0	0937-07	0	0942-12	2	1001-31	1	1006-36	3	1012-42	5
		1007-37	0	1012-42	1	1031-01	3	1036-06	2	1042-12	12
		1037-07	0	1042-12	0						

Keystone Plume 31 October 1967

G-27 70 SBE BMQ 340/10.6		G-16 25 SBE DOQ 336/8.5		G-25 40 SBE DMQ 343/8.7		G-8 60 SBE BMQ 001/8.1		G-36 20 SBE FMQ 014/7.6		G-26 25 SBE COQ 005/7.1	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0830-00	1	0835-05	1	0844-14	0	0910-40	4	0920-50	3	0926-56	2
0900-30	2	0905-35	2	0914-44	0	0940-10	5	0950-20	2	0956-26	4
0930-00	1	0935-05	1	0944-14	4	1010-40	4	1020-50	4	1026-56	4
1000-30	1	1005-35	2	1014-44	2	1040-10	4	1050-20	4	1056-26	4
1030-00	2	1035-05	5	1044-14	1	1110-40	4	1120-50	4	1126-47	6
1100-22	2	1105-27	4	1114-36	3						

Keystone Plume 8 April 1969

G-6 115 SBE HMQ 103/12.1		G-25 75 SBE DMQ 094/12.7		G-36 5 SBE DMQ 084/11.0		G-8 25 SBE DMQ 075/13.8		G-1 30 SBE BMQ 068/13.5		G-26 85 SBE AMQ 061/13.5		G-27 120 SBE DMQ 105/13.5		G-16 105 SBE GMQ 113/13.9	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0945-15	4	0957-27	10	1004-34	6	1015-45	1	1025-55	4	1032-02	9	1102-32	5	1110-40	5
1015-45	5	1027-57	16	1034-04	10	1045-15	6	1055-25	4	1102-32	2	1132-02	12	1140-10	4
1045-15	7	1057-27	19	1104-34	14	1115-45	1	1125-55	3	1132-02	4	1202-32	5	1210-40	6
1115-45	2	1127-57	14	1134-04	4	1145-15	2	1155-25	0	1202-32	5	1232-02	4	1240-10	6
1145-15	6	1157-27	7	1204-34	3	1215-45	2	1225-55	3	1232-02	-	1302-32	2	1310-40	6
1215-45	2	1227-57	2	1234-04	1	1245-15	-	1255-25	2	1302-32	3	1332-02	2	1340-10	3

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Keystone Plume 9 April 1969

G-8 5 SBE		G-25 30 SBE		G-36 30 SBE		G-6 25 SBE		G-16 30 SBE		G-27 30 SBE		G-26 35 SBE		G-1 80 SBE	
BOQ 333/19.9		DMQ 337/18.6		DOQ 341/18.0		DOQ 347/16.7		DMQ 357/15.9		DMQ 005/15.6		DMQ 013/15.3		DMQ 021/16.3	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0955-25	0	1002-32	0	1008-38	0	1016-46	0	1025-55	2	1032-02	4	1040-10	0	1047-17	0
1025-55	0	1032-02	0	1038-08	0	1046-16	0	1055-25	2	1102-32	4	1110-40	0	1117-47	0
1055-25	-	1102-32	0	1108-38	0	1116-46	0	1125-55	0	1132-02	2	1140-10	4	1147-17	0
1125-55	0	1132-02	0	1138-08	0	1146-16	0	1155-25	2	1202-32	0	1210-40	0	1217-47	0
1155-25	0	1202-32	0	1208-38	0	1216-46	0	1225-55	1	1232-02	0	1240-10	0	1247-17	0
1225-55	0	1232-02	0	1238-08	0	1246-16	0	1255-25	0	1302-32	0	1310-40	0	1317-47	0

Keystone Plume 10 April 1969

G-8 -5 SBE		G-25 -5 SBE		G-6 5 SBE		G-36 10 SBE		G-27 30 SBE		G-1 60 SBE		G-26 35 SBE		G-20 30 SBE		G-16 25 SBE	
BMQ 043/2.2		AMQ 033/2.4		DMQ 033/4.2		DMQ 038/5.5		DMQ 040/7.1		DMQ 048/8.4		BMQ 037/10.0		AMQ 045/10.4		BMQ 051/11.2	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
1006-36	0	1012-42	0	1017-47	0	1026-56	0	1032-02	0	1047-17	0	1100-30	0	1106-36	0	1117-47	0
1036-06	0	1042-12	0	1047-17	0	1056-26	0	1102-32	0	1117-47	0	1130-00	0	1136-06	0	1147-17	0
1106-36	-	1112-42	0	1117-47	0	1126-56	0	1132-02	0	1147-17	0	1200-30	0	1206-36	0	1217-47	0
1136-06	0	1142-12	0	1147-17	0	1156-26	0	1202-32	0	1217-47	0	1230-00	0	1236-06	0	1247-17	0
1206-36	0	1212-42	0	1217-47	0	1226-56	0	1232-02	0	1247-17	0	1300-30	0	1306-36	0	1317-47	0
1236-06	0	1242-12	0	1247-17	0	1256-26	0	1302-32	0	1317-47	0	1330-00	0	1336-06	0	1347-17	0

Keystone Plume 11 April 1969

G-25 95 SBE		G-8 80 SBE		G-36 80 SBE		G-6 30 SBE		G-1 90 SBE		G-26 -5 SBE		G-16 20 SBE		G-27 20 SBE		G-20 60 SBE	
EMQ 134/12.6		CMQ 143/12.9		EOQ 138/12.9		CMQ 147/13.3		COQ 150/13.3		DMQ 154/13.6		DMQ 157/13.7		CMQ 162/14.0		AMQ 145/14.7	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0955-25	0	1000-30	0	1011-41	0	1018-48	0	1024-54	0	1029-59	0	1035-05	0	1040-10	0	1056-26	0
1025-55	0	1030-00	0	1041-11	1	1048-18	0	1054-24	0	1059-29	0	1105-35	0	1110-40	0	1126-56	0
1055-25	0	1100-30	-	1111-41	4	1118-48	0	1124-54	0	1129-59	0	1135-05	0	1140-10	0	1156-26	0
1125-55	0	1130-00	0	1141-11	0	1148-18	0	1154-24	0	1159-29	0	1205-35	0	1210-40	0	1226-56	0
1155-25	0	1200-30	1	1211-41	2	1218-48	0	1224-54	0	1229-59	0	1235-05	0	1240-10	0	1256-26	0
1225-55	0	1230-00	2	1241-11	4	1248-18	0	1254-24	0	1259-29	0	1305-35	0	1310-40	0	1326-56	0

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Keystone Plume 12 April 1969

G-25 30 SBE		G-36 45 SBE		G-6 50 SBE		G-8 25 SBE		G-20 25 SBE		G-16 50 SBE		G-1 0 SBE		G-27 -5 SBE		G-26 0 SBE	
CMQ 260/6.8		FMQ 265/6.4		CMQ 269/5.8		DOQ 274/5.3		DMQ 280/5.1		BMQ 289/4.8		DMQ 281/1.6		DMQ 253/1.7		DMQ 265/1.6	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
1047-17	1	1054-24	6	1100-30	0	1105-35	0	1111-41	0	1115-45	0	1130-00	13	1135-05	11	1138-08	12
1117-47	6	1124-54	11	1130-00	1	1135-05	1	1141-11	0	1145-15	0	1200-30	4	1205-35	9	1208-38	-
1147-17	5	1154-24	6	1200-30	1	1205-35	-	1211-41	0	1215-45	0	1230-00	12	1235-05	7	1238-08	8
1217-47	0	1224-54	2	1230-00	1	1235-05	3	1241-11	0	1245-15	0	1300-30	3	1305-35	4	1308-38	7
1247-17	5	1254-24	6	1300-30	5	1305-35	7	1311-41	0	1315-45	0	1330-00	0	1335-05	0	1338-08	1
1317-47	5	1324-54	5	1330-00	5	1335-05	0	1341-11	0	1345-15	0	1400-30	1	1405-35	4	1408-38	6

Keystone Plume 14 April 1969

G-25 80 SBE		G-36 90 SBE		G-6 40 SBE		G-8 15 SBE		G-26 0 SBE		G-16 20 SBE		G-1 20 SBE		G-20 30 SBE		G-27 25 SBE	
DMQ 356/9.3		BMQ 003/9.6		FMQ 009/9.1		GMQ 014/7.6		GMQ 023/7.4		BMQ 028/8.5		DMQ 033/9.3		BMQ 038/10.0		AMQ 045/10.4	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0837-07	0	0846-16	0	0900-30	0	0911-41	0	0920-50	0	0926-56	0	0932-02	0	0939-09	0	0945-15	0
0907-37	0	0916-46	0	0930-00	0	0941-11	0	0950-20	0	0956-26	0	1002-32	0	1009-39	0	1015-45	0
0937-07	0	0946-16	0	1000-30	0	1011-41	-	1020-50	0	1026-56	0	1032-02	0	1039-09	0	1045-15	0
1007-37	0	1016-46	0	1030-00	0	1041-11	0	1050-20	0	1056-26	0	1102-32	0	1109-39	0	1115-45	0
1037-07	0	1046-16	0	1100-30	0	1111-41	0	1120-50	0	1126-56	0	1132-02	0	1139-09	0	1145-15	0
1107-37	0	1116-46	0	1130-00	0	1141-11	0	1150-20	0	1156-26	0	1202-32	0	1209-39	0	1215-45	0

Keystone Plume 17 April 1969

G-25 30 SBE		G-8 45 SBE		G-36 100 SBE		G-6 60 SBE		G-16 40 SBE		G-20 30 SBE		G-26 30 SBE		G-1 10 SBE		G-27 35 SBE	
GMQ 034/15.1		GMQ 037/18.1		AMQ 046/20.9		GMQ 051/20.1		CMQ 056/18.6		GMQ 057/18.0		FMQ 047/10.7		GMQ 042/10.4		FMQ 037/9.9	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0844-14	0	0854-24	0	0909-39	0	0916-46	0	0925-55	0	0935-05	0	0956-26	4	1000-30	1	1006-36	4
0914-44	0	0924-54	0	0939-09	2	0946-16	0	0955-25	0	1005-35	0	1026-56	3	1030-00	4	1036-06	4
0944-14	0	0954-24	-	1009-39	0	1016-46	1	1025-55	4	1035-05	2	1056-26	3	1100-30	0	1106-36	3
1014-44	0	1024-54	0	1039-09	0	1046-16	2	1055-25	0	1105-35	0	1126-56	1	1130-00	0	1136-06	3
1044-14	0	1054-24	0	1109-39	2	1116-46	3	1125-55	4	1135-05	5	1156-26	1	1200-30	0	1206-36	3
1114-44	0	1124-54	0	1139-09	0	1146-16	1	1155-25	5	1205-35	0	1226-56	3	1230-00	0	1236-06	3

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Keystone Plume 28 April 1969

G-8 10 SBE		G-36 -5 SBE		G-25 5 SBE		G-1 20 SBE		G-16 10 SBE		G-6 10 SBE		G-26 15 SBE		G-27 30 SBE	
GMQ 035/2.3		GMQ 027/2.4		DMQ 028/4.3		DMQ 033/4.4		DMQ 037/5.1		DMQ 030/8.7		DMQ 034/9.3		BMQ 037/10.0	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0825-55	2	0830-00	0	0840-10	0	0847-17	0	0851-21	2	0905-35	3	0910-40	3	0915-45	1
0855-25	0	0900-30	0	0910-40	0	0917-47	0	0921-51	0	0935-05	3	0940-10	2	0945-15	3
0925-55	0	0930-00	0	0940-10	0	0947-17	1	0951-21	0	1005-35	3	1010-40	1	1015-45	0
0955-25	0	1000-30	0	1010-40	0	1017-47	2	1021-51	1	1035-05	2	1040-10	1	1045-15	3

Keystone Plume 30 April 1969

G-8 20 SBE		G-6 85 SBE		G-25 105 SBE		G-36 95 SBE		G-16 85 SBE		G-27 90 SBE		G-20 75 SBE		G-26 80 SBE		G-35 45 SBE		G-1 50 SBE	
BMQ 222/4.3		CMQ 230/8.4		EMQ 223/7.6		EMQ 216/7.3		EMQ 209/7.1		AMQ 201/7.0		DMQ 204/9.5		EMQ 211/10.7		AMQ 216/10.0		FOQ 220/9.6	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0853-23	0	0903-33	0	0910-40	0	0914-44	0	0920-50	0	0928-58	0	0938-08	0	0946-16	0	0951-21	0	0956-26	4
0923-53	0	0933-03	3	0940-10	0	0944-14	0	0950-20	0	0958-28	0	1008-38	0	1016-46	0	1021-51	4	1026-56	8
0953-23	0	1003-33	5	1010-40	4	1014-44	3	1020-50	4	1028-58	0	1038-08	0	1046-16	0	1051-21	0	1056-26	0
1023-53	0	1033-03	1	1040-10	4	1044-14	0	1050-20	6	1058-28	0	1108-38	0	1116-46	0	1121-51	0	1126-56	0

Keystone Plume 1 May 1969

G-25 20 SBE		G-8 45 SBE		G-16 80 SBE		G-27 65 SBE		G-6 60 SBE		G-36 80 SBE		G-20 50 SBE		G-26 55 SBE		G-1 80 SBE		G-35 50 SBE	
FMQ 313/10.3		CMQ 319/10.3		CMQ 325/9.0		FMQ 330/9.4		GMQ 336/9.1		GMQ 340/8.8		BMQ 338/3.9		DMQ 324/4.6		BMQ 310/4.5		BMQ 294/4.6	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0845-15	0	0852-22	0	0900-30	6	0910-40	4	0920-50	0	0928-58	3	0946-16	5	0952-22	9	0957-27	14	1002-32	8
0915-45	4	0922-52	2	0930-00	4	0940-10	3	0950-20	2	0958-28	8	1016-46	10	1022-52	17	1027-57	17	1032-02	4
0945-15	6	0952-22	0	1000-30	4	1010-40	1	1020-50	3	1028-58	12	1046-16	10	1052-22	12	1057-27	17	1102-32	4
1015-45	6	1022-52	0	1030-00	5	1040-10	2	1050-20	4	1058-28	8	1116-46	6	1122-52	12	1127-57	9	1132-02	4
1045-15	4	1052-22	4	1100-30	3	1110-40	4	1120-50	5	1128-58	8	1146-16	14	1152-22	8	1157-27	4	1202-32	3
1115-45	2	1122-52	7	1130-00	1	1140-10	4	1150-20	14	1158-28	14	1216-46	10	1222-52	12	1227-57	4	1232-02	3

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Keystone Plume 2 May 1969

G-8 95 SBE EMQ 054/4.7		G-1 35 SBE GMQ 039/7.0		G-20 60 SBE DMQ 049/8.4		G-26 20 SBE DMQ 035/9.5		G-27 20 SBE DMQ 029/8.6		G-25 -5 SBE GMQ 023/7.4		G-35 10 SBE GMQ 015/6.2		G-16 20 SBE DMQ 043/10.5		G-36 30 SBE BMQ 052/11.3		G-6 30 SBE GMQ 059/11.1	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0907-37	0	0919-49	0	0925-55	1	0937-07	4	0945-15	5	0957-27	7	1005-35	1	1020-50	7	1030-00	3	1036-06	0
0937-07	0	0949-19	5	0955-25	11	1007-37	8	1015-45	8	1027-57	2	1035-05	0	1050-20	0	1100-30	0	1106-36	1
1007-37	0	1019-49	2	1025-55	0	1037-07	4	1045-15	0	1057-27	0	1105-35	2	1120-50	0	1130-00	0	1136-06	0
1037-07	0	1049-19	0	1055-25	0	1107-37	0	1115-45	1	1127-57	0	1135-05	1	1150-20	0	1200-30	0	1206-36	0
1107-37	1	1119-49	0	1125-55	0	1137-07	0	1145-15	1	1157-27	5	1205-35	4	1220-50	0	1230-00	0	1236-06	1
1137-07	0	1149-19	0	1155-25	0	1207-37	0	1215-45	0	1227-57	5	1235-05	10	1250-20	0	1300-30	0	1306-36	1

Keystone Plume 3 May 1969

G-8 55 SBE GMQ 088/15.3		G-20 30 SBE GMQ 075/13.9		G-16 5 SBE GMQ 084/10.9		G-27 40 SBE DMQ 094/12.8		G-1 60 SBE BMQ 097/10.2		G-35 10 SBE GMQ 089/8.8		G-6 55 SBE BMQ 079/8.6		G-36 10 SBE GMQ 084/7.1		G-25 30 SBE FMQ 072/6.6		G-26 50 SBE GMQ 094/5.8	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0823-53	0	0834-04	4	0844-14	4	0850-20	4	0902-32	4	0909-39	7	0918-48	1	0930-00	8	0938-08	0	0944-14	5
0853-23	4	0904-34	5	0914-44	5	0920-50	10	0932-02	5	0939-09	4	0948-18	2	1000-30	4	1008-38	0	1014-44	10
0923-53	5	0934-04	4	0944-14	5	0950-20	9	1002-32	4	1009-39	5	1018-48	0	1030-00	3	1038-08	0	1044-14	1
0953-23	5	1004-34	0	1014-44	0	1020-50	5	1032-02	4	1039-09	2	1048-18	0	1100-30	0	1108-38	0	1114-44	-
1023-53	0	1034-04	0	1044-14	1	1050-20	1	1102-32	0	1109-39	0	1118-48	0	1130-00	2	1138-08	0	1144-14	-
1053-23	4	1104-34	0	1114-44	0	1120-50	0	1132-02	0	1139-09	0	1148-18	0	1200-30	1	1208-38	-	1214-44	-

Keystone Plume 5 May 1969

G-16 60 SBE BMQ 263/16.0		G-8 20 SBE CMQ 266/15.5		G-20 75 SBE AMQ 259/14.9		G-35 40 SBE FMQ 261/13.6		G-6 10 SBE GMQ 263/11.5		G-36 90 SBE AMQ 255/11.8	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0901-31	1	0907-37	1	0917-47	0	0927-57	3	0935-05	0	0950-20	3
0931-01	7	0937-07	5	0947-17	0	0957-27	1	1005-35	0	1020-50	0

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Keystone Plume 6 May 1969

G-20 -5 SBE		G-6 0 SBE		G-36 60 SBE		G-35 95 SBE		G-8 55 SBE		G-16 -10 SBE		G-1 80 SBE		G-25 90 SBE		G-26 90 SBE		G-27 80 SBE	
DMQ 184/9.6		GMQ 191/12.6		BMQ 194/11.0		AMQ 201/10.4		DMQ 208/10.4		FMQ 190/9.2		CMQ 187/7.9		AMQ 201/7.0		AMQ 211/7.3		AMQ 218/7.6	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0854-24	0	0914-44	0	0921-51	0	0928-58	0	0937-07	0	0950-20	0	0957-27	0	1010-40	0	1015-45	0	1020-50	0
0924-54	0	0944-14	0	0951-21	0	0958-28	0	1007-37	0	1020-50	0	1027-57	0	1040-10	0	1045-15	0	1050-20	12
0954-24	0	1014-44	0	1021-51	0	1028-58	0	1037-07	0	1050-20	0	1057-27	0	1110-40	0	1115-45	7	1120-50	15
1024-54	0	1044-14	0	1051-21	0	1058-28	0	1107-37	0	1120-50	0	1127-57	0	1140-10	0	1145-15	0	1150-20	12
1054-24	0	1114-44	0	1121-51	0	1128-58	0	1137-07	11	1150-20	0	1157-27	1	1210-40	3	1215-45	0	1220-50	1
1124-54	0	1144-14	0	1151-21	4	1158-28	2	1207-37	15	1220-50	4	1227-57	10	1240-10	11	1245-15	0	1250-20	0

Keystone Plume 7 May 1969

G-36 90 SBE		G-20 90 SBE		G-26 55 SBE		G-8 30 SBE		G-35 10 SBE		G-16 5 SBE		G-25 60 SBE		G-6 20 SBE		G-1 20 SBE		G-27 30 SBE	
AMQ 056/4.0		CMQ 056/6.4		DMQ 049/8.5		GMQ 039/6.4		GMQ 038/5.0		GMQ 029/3.7		BMQ 040/8.4		DMQ 037/9.5		DMQ 044/10.5		BMQ 053/11.3	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0928-58	2	0940-10	1	0952-22	3	1000-30	1	1005-35	2	1010-40	3	1018-48	0	1026-56	0	1032-02	4	1041-11	5
0958-28	6	1010-40	12	1022-52	4	1030-00	4	1035-05	2	1040-10	2	1048-18	0	1056-26	4	1102-32	5	1111-41	5
1028-58	7	1040-10	10	1052-22	1	1100-30	0	1105-35	2	1110-40	2	1118-48	0	1126-56	3	1132-02	4	1141-11	4
1058-28	3	1110-40	1	1122-52	-	1130-00	1	1135-05	0	1140-10	1	1148-18	0	1156-26	2	1202-32	0	1211-41	0
1128-58	8	1140-10	2	1152-22	2	1200-30	1	1205-35	0	1210-40	0	1218-48	0	1226-56	2	1232-02	0	1241-11	5
1158-28	2	1210-40	0	1222-52	3	1230-00	0	1235-05	0	1240-10	0	1248-18	0	1256-26	3	1302-32	0	1311-41	5

Keystone Plume 9 October 1969

G-20 25 SBE		G-26 40 SBE		G-36 60 SBE		G-1 25 SBE		G-27 50 SBE		G-25 30 SBE		G-35 20 SBE		G-16 30 SBE		G-6 60 SBE		G-8 25 SBE	
HMQ 058/15.7		AMQ 055/14.4		DMQ 049/14.8		DMQ 049/13.3		GMQ 045/12.6		BMQ 053/11.7		BMQ 049/10.7		DMQ 058/11.2		BMQ 062/10.3		AMQ 044/10.4	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0935-05	5	0942-12	0	0950-20	4	0957-27	3	1007-37	9	1015-45	5	1022-52	4	1030-00	5	1035-05	6	1047-17	10
1005-35	10	1012-42	2	1020-50	4	1027-57	4	1037-07	4	1045-15	10	1052-22	5	1100-30	6	1105-35	6	1117-47	9
1035-05	10	1042-12	2	1050-20	3	1057-27	3	1107-37	4	1115-45	10	1122-52	7	1130-00	6	1135-05	11	1147-17	13
1105-35	9	1112-42	3	1120-50	5	1127-57	4	1137-07	4	1145-15	9	1152-22	7	1200-30	8	1205-35	9	1217-47	11
1135-05	10	1142-12	3	1150-20	4	1157-27	5	1207-37	4	1215-45	8	1222-52	8	1230-00	6	1235-05	10	1247-17	11
1205-35	11	1212-42	2	1220-50	12	1227-57	10	1237-07	13	1245-15	10	1252-22	7	1300-30	7	1305-35	13	1317-47	10

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Keystone Plume 10 October 1969

G-35 50 SBE DMQ 047/8.3		G-6 75 SBE GMQ 039/8.4		G-16 30 SBE DMQ 039/7.1		G-1 10 SBE GMQ 037/5.0		G-26 10 SBE GMQ 012/3.2		G-8 5 SBE GMQ 023/7.1		G-36 25 SBE GMQ 027/8.5		G-25 15 SBE DMQ 034/9.4		G-20 30 SBE BMQ 031/11.1		G-27 50 SBE EMQ 023/9.8	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0935-05	8	0950-20	0	0955-25	4	1002-32	4	1010-40	4	1019-49	10	1025-55	6	1030-00	6	1035-05	9	1045-15	14
1005-35	5	1020-50	0	1025-55	1	1032-02	3	1040-10	4	1049-19	13	1055-25	9	1100-30	9	1105-35	7	1115-45	9
1035-05	5	1050-20	0	1055-25	3	1102-32	6	1110-40	4	1119-49	9	1125-55	4	1130-00	9	1135-05	6	1145-15	8
1105-35	4	1120-50	0	1125-55	3	1132-02	2	1140-10	3	1149-19	5	1155-25	6	1200-30	9	1205-35	6	1215-45	8
1135-05	0	1150-20	0	1155-25	4	1202-32	2	1210-40	8	1219-49	10	1225-55	9	1230-00	8	1235-05	6	1245-15	8
1205-35	1	1220-50	0	1225-55	7	1232-02	1	1240-10	4	1249-19	11	1255-25	10	1300-30	8	1305-35	9	1315-45	8

Homer City Plume 11 October 1969

G-1 10 SBE AMQ 033/8.1		G-6 30 SBE GMQ 034/9.8		G-26 20 SBE AMQ 022/10.9		G-35 -20 SBE GMQ 040/13.7		G-16 65 SBE HMQ 032/14.3		G-36 40 SBE GMQ 024/15.6		G-20 20 SBE BMQ 025/17.1		G-25 90 SBE EMQ 031/17.5		G-8 50 SBE CMQ 034/16.4		G-27 60 SBE HMQ 030/15.7	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0922-52	2	0928-58	1	0936-06	4	0957-27	1	1005-35	2	1015-45	4	1025-55	4	1037-07	4	1050-20	5	1057-27	9
0952-22	3	0958-28	0	1006-36	3	1027-57	3	1035-05	1	1045-15	3	1055-25	4	1107-37	4	1120-50	14	1127-57	9
1022-52	1	1028-58	0	1036-06	3	1057-27	3	1105-35	3	1115-45	4	1125-55	4	1137-07	4	1150-20	5	1157-27	9
1052-22	1	1058-28	1	1106-36	4	1127-57	2	1135-05	1	1145-15	4	1155-25	4	1207-37	5	1220-50	6	1227-57	8
1122-52	1	1128-58	2	1136-06	3	1157-27	2	1205-35	4	1215-45	4	1225-55	4	1237-07	5	1250-20	5	1257-27	6
1152-22	3	1158-28	2	1206-36	4	1227-57	2	1235-05	4	1245-15	4	1255-25	4	1307-37	5	1320-50	8	1327-57	9

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G-27 -35 SBE GMQ 358/3.8		G-26 -35 SBE GMQ 355/6.5		G-8 0 SBE BMQ 002/8.3		G-16 30 SBE EMQ 006/10.6		G-6 30 SBE BMQ 352/10.3		G-1 35 SBE EMQ 359/12.2		G-20 50 SBE AMQ 357/14.6		G-36 -40 SBE DMQ 014/17.9		G-35 30 SBE FMQ 008/16.5		G-25 25 SBE BMQ 006/14.3	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0915-45	0	0926-56	0	0933-03	1	0944-14	1	0953-23	0	1005-35	1	1013-43	4	1027-57	4	1036-06	5	1048-18	1
0945-15	0	0956-26	0	1003-33	2	1014-44	1	1023-53	1	1035-05	0	1043-13	4	1057-27	4	1106-36	6	1118-48	2
1015-45	3	1026-56	0	1033-03	4	1044-14	1	1053-23	0	1105-35	1	1113-43	2	1127-57	6	1136-06	12	1148-18	2
1045-15	3	1056-26	0	1103-33	0	1114-44	0	1123-53	4	1135-05	0	1143-13	2	1157-27	4	1206-36	4	1218-48	4
1115-45	3	1126-56	1	1133-02	1	1144-14	1	1153-23	0	1205-35	1	1213-43	5	1227-57	4	1236-06	8	1248-18	0

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Homer City Plume 15 October 1969

G-6 -10 SBE AMQ 210/14.3		G-16 -15 SBE AMQ 209/16.5		G-25 -15 SBE EMQ 214/17.3		G-8 -10 SBE CMQ 220/17.5		G-1 20 SBE AMQ 224/16.7		G-26 30 SBE EMQ 220/14.5		G-20 10 SBE FMQ 224/14.1		G-27 -40 SBE BMQ 222/12.5		G-35 -40 SBE GMQ 224/9.5		G-36 -25 SBE FMQ 218/6.6	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
1002-32	0	1007-37	0	1015-45	0	1022-52	0	1028-58	1	1040-10	2	1048-18	0	1055-25	1	1108-38	2	1115-45	0
1032-02	0	1037-07	1	1045-15	4	1052-22	0	1058-28	1	1110-40	0	1118-48	0	1125-55	1	1138-08	0	1145-15	0
1102-32	0	1107-37	2	1115-45	4	1122-52	0	1128-58	2	1140-10	1	1148-18	2	1155-25	1	1208-38	2	1215-45	0
1132-02	0	1137-07	1	1145-15	2	1152-22	3	1158-28	2	1210-40	1	1218-48	1	1225-55	4	1238-08	0	1245-15	0

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G-27 -45 SBE DMQ 084/2.6		G-20 -10 SBE FMP 065/3.6		G-26 20 SBE FMQ 074/3.8		G-6 45 SBE BMQ 067/5.6		G-1 115 SBE AMQ 065/7.5		G-16 115 SBE BMQ 072/8.9		G-36 85 SBE AMP 079/8.5		G-8 110 SBE EMQ 092/9.8		G-25 100 SBE EMQ 084/10.5		G-35 80 SBE EMQ 079/10.6	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
1137-07	4	1144-14	3	1148-18	1	1205-35	1	1214-44	2	1220-50	3	1229-59	2	1240-10	4	1247-17	4	1255-25	1
1207-37	4	1214-44	1	1218-48	1	1235-05	2	1244-14	2	1250-20	3	1259-29	4	1310-40	4	1317-47	4	1325-55	2
1237-07	2	1244-14	1	1248-18	1	1305-35	2	1314-44	2	1320-50	3	1329-59	4	1340-10	4	1347-17	3	1355-25	2
1307-37	4	1314-44	0	1318-48	1	1335-05	2	1344-14	2	1350-20	3	1359-29	4	1410-40	3	1417-47	3	1425-55	1

Homer City Plume 18 October 1969

G-16 155 SBE AMQ 067/8.7		G-35 85 SBE AMP 080/8.3		G-26 110 SBE EMQ 093/9.3		G-27 100 SBE EMQ 084/10.4		G-1 80 SBE AMR 079/10.8		G-20 90 SBE EMQ 070/11.2		G-8 135 SBE BMQ 061/11.3		G-25 45 SBE CMQ 063/14.6		G-6 90 SBE FMQ 075/14.5		G-36 65 SBE FMQ 083/13.5	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0847-17	3	0855-25	1	0900-30	3	0909-39	4	0926-56	4	0935-05	5	0944-14	5	1003-33	5	1015-45	3	1025-55	1
0917-47	5	0925-55	1	0930-00	3	0939-09	4	0956-26	2	1005-35	4	1014-44	8	1033-03	8	1045-15	2	1055-25	1
0947-17	3	0955-25	3	1000-30	3	1009-39	4	1026-56	2	1035-05	8	1044-14	4	1103-33	8	1115-45	3	1125-55	2
1017-47	4	1025-55	4	1030-00	4	1039-09	2	1056-26	2	1105-35	4	1114-44	3	1133-03	4	1145-15	5	1155-25	3
1047-17	8	1055-25	-	1100-30	2	1109-39	3	1126-56	4	1135-05	4	1144-14	5	1203-33	4	1215-45	4	1225-55	3
1117-47	6	1125-55	-	1130-00	4	1139-09	4	1156-26	3	1205-35	4	1214-44	4	1233-03	3	1245-15	4	1255-25	2

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Homer City Plume 20 October 1969

G-16 -50 SBE BMQ 041/2.3		G-8 -50 SBE DMQ 046/1.9		G-20 -50 SBE DMQ 058/1.9		G-26 -55 SBE DMQ 047/3.5		G-36 -50 SBE BMQ 057/3.5		G-25 -20 SBE EMQ 063/3.6		G-6 -20 SBE BMQ 053/4.3		G-1 55 SBE DMQ 057/7.9		G-27 30 SBE DMQ 052/8.3	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
1039-09	4	1043-13	5	1047-17	3	1100-30	4	1106-36	3	1115-45	4	1120-50	9	1129-59	4	1132-02	3
1109-39	4	1113-43	7	1117-47	4	1130-00	3	1136-06	4	1145-15	2	1150-20	4	1159-29	9	1202-32	9
1139-09	3	1143-13	4	1147-17	4	1200-30	4	1206-36	4	1215-45	2	1220-50	5	1229-59	5	1232-02	4
1209-39	2	1213-43	2	1217-47	4	1230-00	4	1236-06	4	1245-15	4	1250-20	4	1259-29	5	1302-32	3
1239-09	1	1243-13	2	1247-17	4	1300-30	4	1306-36	6	1315-45	3	1320-50	5	1329-59	2	1332-02	4
1309-39	7	1313-43	5	1317-47	2	1330-00	5	1336-06	4	1345-15	3	1350-20	4	1359-29	3	1402-32	6

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G-27 -50 SBE GMQ 085/2.1		G-1 -50 SBE GMQ 073/1.9		G-26 165 SBE AMQ 083/8.8		G-6 100 SBE AMQ 079/9.3		G-20 75 SBE EMQ 084/9.6		G-25 85 SBE CMQ 095/9.4		G-8 65 SBE AMQ 081/11.4		G-36 65 SBE GMQ 083/13.2		G-16 135 SBE GMQ 093/12.6	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0932-02	0	0937-07	2	1000-30	2	1008-38	3	1018-48	2	1025-55	2	1038-08	1	1046-16	3	1055-25	5
1002-32	0	1007-37	2	1030-00	4	1038-08	1	1048-18	4	1055-25	2	1108-38	2	1116-46	0	1125-55	3
1032-02	0	1037-07	1	1100-30	4	1108-38	1	1118-48	3	1125-55	4	1138-08	2	1146-16	1	1155-25	3
1102-32	0	1107-37	0	1130-00	1	1138-08	1	1148-18	1	1155-25	2	1208-38	4	1216-46	2	1225-55	3
1132-02	0	1137-07	1	1200-30	1	1208-38	3	1218-48	2	1225-55	1	1238-08	3	1246-16	4	1255-25	-
1202-32	0	1207-37	1	1230-00	1	1238-08	3	1248-18	0	1255-25	3	1308-38	2	1316-46	2	1325-55	-

Keystone Plume 28 October 1969

G-20 25 SBE GMQ 131/15.3		G-8 70 SBE BMQ 137/15.3		G-16 65 SBE BMQ 141/16.2		G-35 30 SBE DMQ 145/17.0		G-26 45 SBE CMQ 150/17.2		G-6 35 SBE CMQ 154/17.6		G-36 25 SBE FMQ 159/17.6		G-1 65 SBE FMQ 154/14.7		G-27 30 SBE CMQ 148/13.3	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
1005-35	3	1011-41	1	1018-48	3	1027-57	4	1033-03	4	1040-10	2	1047-17	0	1057-27	0	1104-34	2
1035-05	3	1041-11	3	1048-18	5	1057-27	4	1103-33	1	1110-40	2	1117-47	1	1127-57	0	1134-04	4
1105-35	4	1111-41	5	1118-48	5	1127-57	4	1133-03	0	1140-10	2	1147-17	0	1157-27	0	1204-34	2
1135-05	3	1141-11	3	1148-18	4	1157-27	3	1203-33	2	1210-40	2	1217-47	0	1227-57	0	1234-04	1
1205-35	4	1211-41	1	1218-48	2	1227-57	2	1233-03	0	1240-10	2	1247-17	0	1257-27	0	1304-34	1
1235-05	4	1241-11	1	1248-18	1	1257-27	4	1303-33	-	1310-40	3	1317-47	1	1327-57	0	1334-04	2

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Keystone Plume 29 October 1969

G-25 55 SBE		G-26 10 SBE		G-35 -15 SBE		G-1 -25 SBE		G-20 15 SBE		G-8 10 SBE		G-27 90 SBE		G-6 65 SBE		G-36 70 SBE		G-16 65 SBE	
BMQ 274/15.9		DMQ 272/15.9		DMQ 266/16.4		DMQ 262/16.9		AMQ 258/17.4		FMP 261/11.5		AMQ 267/11.6		CMQ 273/3.7		AMQ 261/4.2		CMP 249/3.8	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0942-12	0	0948-18	7	0954-24	7	1000-30	1	1006-36	0	1021-51	2	1028-58	3	1053-23	0	1100-30	0	1105-35	7
1012-42	0	1018-48	4	1024-54	10	1030-00	3	1036-06	4	1051-21	5	1058-28	7	1123-53	0	1130-00	2	1135-05	10
1042-12	0	1048-18	4	1054-24	9	1100-30	7	1106-36	6	1121-51	12	1128-58	2	1153-23	0	1200-30	8	1205-35	4
1112-42	0	1118-48	3	1124-54	4	1130-00	1	1136-06	3	1151-21	10	1158-28	2	1223-53	0	1230-00	3	1235-05	3
1142-12	0	1148-18	4	1154-24	0	1200-30	1	1206-36	4	1221-51	10	1228-58	0	1253-23	3	1300-30	3	1305-35	1
1212-42	0	1218-48	0	1224-54	0	1230-00	2	1236-06	0	1251-21	6	1258-28	2	1323-53	1	1330-00	4	1335-05	0

Keystone Plume 31 October 1969

G-25 90 SBE		G-36 120 SBE		G-20 30 SBE		G-35 65 SBE		G-8 55 SBE		G-6 90 SBE		G-26 75 SBE		G-1 25 SBE		G-27 25 SBE		G-16 15 SBE	
EMP 353/5.5		FMP 340/6.4		AMQ 335/8.4		BMQ 340/10.5		CMQ 349/8.8		EMP 003/9.6		FMP 353/7.7		COQ 009/7.2		GMP 013/9.0		DMQ 005/5.3	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0909-39	0	0917-47	0	0924-54	0	0933-03	0	0946-16	0	0958-28	-	1011-41	0	1020-50	1	1028-58	1	1041-11	2
0939-09	0	0947-17	2	0954-24	5	1003-33	1	1016-46	0	1028-58	1	1041-11	0	1050-20	0	1058-28	0	1111-41	1
1009-39	0	1017-47	3	1024-54	6	1033-03	3	1046-16	1	1058-28	1	1111-41	0	1120-50	0	1128-58	0	1141-11	1
1039-09	0	1047-17	4	1054-24	2	1103-33	3	1116-46	0	1128-58	0	1141-11	-	1150-20	0	1158-28	0	1211-41	1
1109-39	2	1117-47	4	1124-54	2	1133-03	2	1146-16	0	1158-28	0	1211-41	-	1220-50	0	1228-58	2	1241-11	1
1139-09	-	1147-17	1	1154-24	3	1203-33	2	1216-46	1	1228-58	0	1241-11	-	1250-20	1	1258-28	2	1311-41	3

Homer City Plume 6 November 1969

G-35 -45 SBE		G-1 -40 SBE		G-6 -50 SBE		G-20 -55 SBE		G-26 60 SBE		G-36 30 SBE		G-25 45 SBE		G-16 65 SBE		G-27 130 SBE		G-8 160 SBE	
DMQ 107/2.4		DMQ 119/2.4		DMQ 150/2.3		DMQ 130/2.4		CMQ 114/9.2		BMQ 120/9.5		DMR 122/10.5		COQ 128/10.3		COQ 130/10.6		EOP 135/10.4	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
1002-32	0	1010-40	1	1017-47	0	1022-52	1	1102-32	0	1106-36	0	1110-40	0	1115-45	0	1120-50	0	1125-55	0
1032-02	0	1040-10	1	1047-17	0	1052-22	0	1132-02	0	1136-06	0	1140-10	0	1145-15	0	1150-20	0	1155-25	0
1102-32	0	1110-40	2	1117-47	0	1122-52	1	1202-32	0	1206-36	0	1210-40	0	1215-45	0	1220-50	0	1225-55	0
1132-02	0	1140-10	0	1147-17	0	1152-22	-	1232-02	0	1236-06	0	1240-10	0	1245-15	0	1250-20	0	1255-25	0
1202-32	0	1210-40	0	1217-47	0	1222-52	-	1302-32	0	1306-36	0	1310-40	-	1315-45	0	1320-50	0	1325-55	0
1232-02	0	1240-10	0	1247-17	0	1252-22	0	1332-02	0	1336-06	0	1340-10	-	1345-15	0	1350-20	0	1355-25	0

HELICOPTER TEMPERATURE PROFILES

Table 8 lists the helicopter profiles obtained during spiral ascents just upwind of the Keystone or Homer City Station. Dry-bulb and wet-bulb temperatures are listed for 50-meter intervals above stack base plus additional levels such as bases and tops of inversions. Wet-bulb values are occasionally missing because the sensor froze.

On most profiles, surface dry-bulb and wet-bulb values are included. These temperatures were measured within 1 meter of the surface during 30-mph or greater forward speeds so that no downwash interfered with the readings. To allow for changing pressure patterns during an experiment, the helicopter landed before each profile so the indicated surface height from the pressure transducer could be recorded. A flight time of approximately 5 minutes was required to complete a 1000-meter profile.

During the October 1967 series, 12 temperature profiles were begun at Jimmy Stewart Airport instead of near the Keystone Station; these are appropriately identified in the following table. Because the airport elevation is equivalent to mid-height of the Keystone stacks, no temperature or wet-bulb values are listed for the levels of surface, 50, and 100 meters above stack base for these 12 profiles. files.

Table 8. HELICOPTER TEMPERATURE PROFILES

Symbols

Ascn # : Individual ascension or profile designation.
EST : Beginning time of profile.
Z (m) : Height above stack base elevation in whole meters.
WB (°C) : Wet-bulb temperature to nearest tenth degree Centigrade.
T (°C) : Dry-bulb temperature to nearest tenth degree Centigrade.
Sfc : Temperatures measured within one meter of stack base elevation.
--- : Missing data.

Table 8. HELICOPTER TEMPERATURE PROFILES

Ascn #1 13 October 1967 0629 EST Airport			Ascn #2 13 October 1967 0745 EST Airport			Ascn #3 13 October 1967 1017 EST Airport			Ascn #4 16 October 1967 0705 EST Keystone			Ascn #5 16 October 1967 1033 EST Keystone			Ascn #6 17 October 1967 0646 EST Keystone			Ascn #7 17 October 1967 0955 EST Keystone		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	---	---	Sfc	---	---	Sfc	---	---	Sfc	---	---	Sfc	---	---	Sfc	---	---	Sfc	---	---
50	---	---	50	---	---	50	---	---	50	---	---	30	16.5	19.8	50	---	---	50	---	---
100	---	---	100	---	---	100	---	---	100	---	---	50	16.5	19.8	80	11.7	12.6	100	14.8	17.8
122	0.8	0.9	150	---	2.0	122	7.3	10.3	112	14.9	17.1	100	16.2	19.4	100	13.1	14.3	150	14.4	17.5
142	0.4	0.6	200	---	3.6	150	6.8	9.6	150	14.7	16.7	150	16.0	19.1	150	12.9	14.9	200	14.0	17.0
150	1.2	1.5	250	---	6.3	200	6.6	9.4	200	15.1	17.3	200	15.7	18.8	200	12.7	15.0	250	13.7	16.7
200	3.7	4.6	267	---	6.6	250	6.0	8.6	250	14.7	17.2	250	15.4	18.5	250	13.2	16.0	252	13.8	17.0
250	5.3	7.0	300	---	6.6	300	5.5	8.0	300	14.8	17.0	300	14.9	17.8	300	13.3	16.2	300	13.4	16.3
300	5.5	7.4	350	---	6.9	350	5.3	7.7	350	14.6	17.1	350	14.8	17.6	350	13.1	16.1	350	13.2	16.4
350	5.4	7.4	400	---	6.5	400	4.7	7.0	400	14.6	17.3	400	14.8	17.5	400	13.0	16.0	400	12.7	15.7
400	5.3	7.2	450	---	6.4	450	4.4	6.6	450	14.5	17.1	450	14.4	17.1	422	13.0	16.6	442	12.7	15.5
450	4.7	6.7	500	---	6.1	500	4.1	6.1	500	14.5	17.0	500	14.5	17.3	450	12.8	16.4	450	12.5	15.5
500	4.6	6.5	550	---	5.6	550	3.8	5.7	550	14.6	17.1	550	14.3	17.0	500	12.4	15.8	500	13.0	16.2
550	5.0	6.2	600	---	5.3	600	3.5	5.3	600	14.4	16.8	600	14.2	16.8	550	12.2	15.6	550	12.7	15.8
600	---	5.4	650	---	4.9	650	3.2	4.9	650	14.4	16.7	650	14.2	16.7	600	11.8	15.2	600	12.6	15.6
650	---	5.1	700	---	4.5	700	2.8	4.2	700	14.3	16.6	700	13.8	16.1	650	12.1	15.4	650	12.5	15.3
700	---	4.8	750	---	4.2	750	2.5	3.9	750	14.2	16.4	725	13.5	15.6	700	12.3	15.7	700	12.4	15.2
750	---	4.4	800	---	3.5	800	2.3	3.6							750	12.0	15.4	750	12.2	14.9
800	---	4.1	850	---	3.1	850	1.8	3.0							800	11.6	15.0	767	12.0	14.7
850	---	3.6	900	---	2.6	900	1.4	2.5							850	11.4	14.7			
900	---	3.2	950	---	2.2	950	1.1	1.9							900	11.3	14.3			
950	---	2.8	1000	---	1.9	1000	0.7	1.4							950	11.0	13.8			
1000	---	2.5	1050	---	1.4	1035	0.7	1.5							1000	10.7	13.3			
1050	---	2.0	1100	---	1.1															

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #8 20 October 1967 0658 EST Keystone			Ascn #9 20 October 1967 0848 EST Airport			Ascn #10 21 October 1967 0655 EST Keystone			Ascn #11 21 October 1967 0903 EST Airport			Ascn #12 22 October 1967 0658 EST Keystone			Ascn #13 22 October 1967 0814 EST Airport			Ascn #14 22 October 1967 0933 EST Keystone		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	---	---	Sfc	---	---	Sfc	---	---	Sfc	---	---	Sfc	---	---	Sfc	---	---	Sfc	---	---
35	0.8	1.4	50	---	---	50	---	---	50	---	---	50	---	---	50	---	---	50	4.7	6.2
50	0.8	1.4	100	---	---	80	5.7	7.9	100	---	---	100	-0.1	0.2	100	---	---	100	4.8	6.4
100	0.8	1.4	132	3.2	3.8	100	5.5	7.7	130	5.3	8.2	150	2.6	3.4	120	1.6	2.0	150	4.2	5.6
150	0.8	1.5	150	2.1	2.9	150	5.3	7.5	150	5.0	8.0	200	4.0	5.4	150	1.1	1.6	200	4.0	5.4
200	0.8	1.5	200	1.8	2.6	200	5.0	7.2	200	4.9	7.6	250	4.2	5.6	170	1.0	1.6	250	3.6	5.0
250	0.6	1.6	250	1.5	2.3	250	4.7	7.0	250	4.4	7.1	267	4.1	5.5	200	2.6	3.8	300	3.2	4.8
300	2.5	4.4	300	1.2	1.8	300	4.3	6.6	300	4.0	6.6	300	4.0	5.8	250	2.7	4.1	310	3.3	4.4
350	2.6	4.5	322	1.0	1.6	350	4.1	6.4	350	3.7	6.2	327	3.9	6.0	300	3.3	5.0	350	2.9	4.9
400	2.3	4.3	342	1.0	2.0	400	3.8	6.2	400	3.5	5.9	350	3.9	6.0	350	3.1	5.2	400	2.7	4.7
450	2.2	4.2	350	1.6	2.6	450	3.4	6.0	450	3.3	5.5	400	3.7	5.8	400	3.0	5.4	450	2.5	4.5
500	2.0	4.0	372	0.8	1.6	500	3.0	6.0	500	2.7	5.1	450	3.4	5.4	450	2.9	5.2	500	2.3	4.3
550	1.8	3.6	400	1.2	2.6	550	2.6	6.0	550	2.6	4.6	500	3.1	5.0	500	2.8	5.0	550	2.1	4.0
600	1.4	3.2	442	2.3	4.2	600	2.4	5.8	600	2.2	4.2	550	2.8	4.6	550	2.5	4.5	600	1.7	3.5
650	1.0	2.6	450	2.3	4.2	650	2.3	5.6	650	1.9	3.8	600	2.5	4.2	600	1.9	3.8	650	1.5	3.2
700	0.6	2.2	500	2.0	4.0	700	2.0	5.1	670	1.5	4.0	650	2.2	3.8	650	1.8	3.6	700	1.2	2.8
750	0.4	1.9	550	1.6	3.5	750	1.8	4.8	700	1.2	3.4	700	1.8	3.3	700	1.5	3.2	750	0.9	2.4
800	0.1	1.5	600	1.4	3.2	800	1.3	4.4	735	1.0	2.9	750	1.4	2.8	750	1.0	2.6	800	0.6	2.0
850	-0.4	0.8	650	1.2	2.8	850	1.0	4.0	750	0.8	3.5	800	1.1	2.4	800	0.8	2.2	850	0.4	1.7
900	-0.6	0.4	700	0.8	2.3	900	0.6	3.5	780	0.7	3.5	850	0.8	2.0	850	0.5	1.8	900	0.0	1.2
950	---	0.0	750	0.5	1.9	950	0.2	3.0	800	0.5	2.5	900	0.4	1.5	900	-0.2	1.0	950	-0.3	0.7
1000	---	- 0.2	800	0.2	1.5	1000	-0.1	2.5	850	0.0	1.8	950	0.1	1.1	950	-0.4	0.8	1000	-0.5	0.4
1050	-2.2	0.6	850	-0.1	1.1	1050	-0.4	2.1	880	-0.1	1.5	1000	-0.3	0.6	980	-0.3	1.0	1050	-0.8	0.6
1100	-2.2	0.5	900	-0.8	0.6	1100	-0.9	1.5	890	0.0	2.6	1050	-0.4	0.4				1100	-0.8	1.2
1122	-2.2	0.9	950	-1.3	0.8	1130	-1.1	1.2										1150	-1.3	1.4
1150	-0.9	1.1	1000	-1.8	1.3													1200	-1.5	2.8
			1050	-2.2	1.3													1250	-1.6	3.6
																		1300	-1.6	3.6
																		1340	-1.5	3.7

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #15
23 October 1967
0655 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	---	---
10	---	-0.2
20	---	-0.6
40	0.2	0.6
50	0.1	0.5
60	-0.2	0.2
100	1.3	2.0
150	4.0	6.3
200	5.5	9.2
210	6.4	10.2
250	6.7	10.7
300	6.9	11.1
350	7.0	11.5
400	7.1	11.8
450	7.2	12.0
500	7.6	13.2
550	7.3	13.0
600	7.2	12.8
650	7.2	12.6
700	6.7	12.0
750	6.2	11.6
800	6.1	11.4
850	6.1	11.2
900	5.8	10.9
950	5.0	11.4
1000	4.8	12.0
1050	4.9	12.1
1100	4.7	11.9
1130	4.6	11.8

Ascn #16
23 October 1967
0808 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	---	---
50	---	---
75	1.3	2.3
100	2.2	3.8
150	4.2	7.0
180	1.4	2.4
200	5.1	9.2
250	5.8	10.3
280	5.9	11.4
300	6.2	11.1
350	6.3	11.2
400	6.2	11.2
450	6.4	11.4
500	6.9	12.7
550	7.1	12.4
600	6.9	12.1
650	6.7	12.0
700	6.4	12.1
750	6.2	11.8

Ascn #17
23 October 1967
0934 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	---	---
20	6.8	9.0
50	5.8	8.2
77	5.8	7.9
100	5.9	8.8
120	3.6	6.4
150	7.1	10.7
200	7.0	11.6
250	6.0	11.4
300	7.4	12.9
350	7.4	13.0
400	7.7	13.3
450	7.5	13.0
500	7.3	12.7
550	7.2	12.3
600	6.8	11.8
650	6.7	11.7
700	7.0	12.3
750	6.7	12.1
800	6.4	11.9
850	5.9	11.8
867	5.9	11.7

Ascn #18
23 October 1967
1106 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	---	---
30	12.0	17.4
50	11.4	16.4
100	10.6	15.9
150	10.7	15.8
200	10.2	15.6
250	9.6	15.4
300	9.5	14.7
350	8.8	14.2
400	8.7	14.0
450	8.0	13.4
500	7.8	13.1
550	7.5	12.7
600	7.2	12.2
650	6.8	11.7
700	6.9	11.6
750	6.4	11.0
770	6.3	10.5
800	6.9	11.6
830	6.0	10.8
850	6.3	11.5
900	7.0	11.8
950	---	11.4
1000	---	11.2
1050	---	11.4
1087	---	10.7

Ascn #19
24 October 1967
0654 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	---	---
15	1.9	2.3
50	2.8	3.4
70	4.3	5.2
100	4.4	5.6
120	5.8	7.6
150	6.0	8.2
200	6.5	9.2
250	7.1	10.6
270	7.8	11.6
300	8.0	11.8
350	7.9	11.7
400	7.8	11.8
450	7.9	12.0
500	7.9	11.9
550	7.7	11.5
600	7.8	11.4
650	7.6	11.0
685	7.5	10.7
700	8.0	11.0
750	7.9	10.9
800	8.1	10.9
850	8.0	10.7
900	7.6	10.4
950	7.5	10.3
1000	7.2	10.2
1050	6.8	10.2
1080	6.3	9.9

Ascn #20
24 October 1967
0858 EST
Airport

Z(m)	WB(°C)	T(°C)
Sfc	---	---
50	---	---
100	---	---
130	8.6	12.0
150	8.4	11.8
200	8.0	11.3
250	7.8	11.0
300	7.4	10.5
350	7.2	10.2
370	6.8	10.0
400	7.2	11.0
450	7.8	11.8
480	8.4	12.5
500	8.1	12.1
550	8.0	11.8
600	8.1	11.6
650	8.0	11.4
665	7.4	10.8

Ascn #21
24 October 1967
0939 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	---	---
50	---	---
85	9.0	12.4
100	8.9	12.1
150	8.4	11.5
200	8.2	11.5
250	8.1	11.4
290	8.0	11.4
295	8.3	12.2
300	8.4	11.8
330	7.8	11.2
350	7.6	11.4
400	7.7	11.6
450	7.8	11.8

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #22 24 October 1967 1029 EST Keystone			Ascn #23 26 October 1967 0658 EST Keystone			Ascn #24 26 October 1967 0936 EST Keystone			Ascn #25 26 October 1967 0959 EST Keystone			Ascn #26 27 October 1967 0656 EST Keystone			Ascn #27 27 October 1967 0848 EST Airport			Ascn #28 27 October 1967 0938 EST Keystone		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	---	---	Sfc	---	---	Sfc	---	---	Sfc	2.4	4.6	Sfc	---	---	Sfc	---	---	Sfc	---	---
50	---	---	50	---	---	30	2.1	4.3	50	1.9	4.1	10	1.4	2.0	50	---	---	50	6.7	10.4
90	10.6	15.0	60	2.8	3.7	50	2.1	4.3	100	1.8	3.8	50	1.6	2.7	100	---	---	100	6.4	10.2
100	10.5	14.9	100	2.6	3.6	100	1.7	3.8	150	1.4	3.3	80	2.1	4.0	130	4.6	7.6	150	6.3	9.9
150	10.5	14.7	150	2.2	3.4	150	1.4	3.4	200	0.9	2.8	100	3.3	5.4	150	5.2	8.2	200	5.8	9.4
200	10.0	14.2	200	1.7	2.9	200	1.1	3.0	250	0.4	2.2	150	3.7	6.0	200	4.7	7.5	250	5.7	9.3
250	9.5	13.5	250	1.6	2.7	250	0.7	2.5	300	0.2	1.8	200	3.8	6.2	250	4.4	7.0	300	5.3	8.9
300	9.3	13.1	300	1.1	2.2	300	0.4	2.1	350	0.2	1.4	250	3.8	6.3	300	4.0	6.4	350	5.1	8.5
350	9.0	12.8	350	0.8	1.8	350	0.2	1.8	400	-0.5	0.9	270	4.2	7.0	350	3.8	6.1	400	4.9	8.3
400	8.6	12.3	400	0.4	1.4	400	0.1	1.1	450	-0.8	0.5	300	4.2	7.1	400	3.6	5.8	450	4.8	8.0
450	8.4	12.0	450	0.0	1.0	450	-0.5	0.7	500	-1.2	0.0	350	3.9	6.8	450	3.2	5.6	480	4.2	7.6
500	8.0	11.4	500	-0.4	0.6	500	-0.5	0.6	550	---	- 0.4	400	3.8	6.8	500	2.8	5.0	500	4.6	8.0
550	8.0	11.2	550	-0.7	0.2	550	---	- 0.4	600	---	- 0.8	450	3.8	6.9	520	3.4	6.4	550	4.1	7.4
600	7.4	10.7	560	-0.5	0.3	600	---	- 0.8	650	---	- 1.2	500	3.8	7.1	550	3.4	6.4	600	4.0	7.2
650	6.9	10.2	600	---	- 0.2	650	---	- 1.3	700	---	- 1.7	550	3.4	7.0	600	4.2	8.6	650	3.9	7.2
690	6.6	9.8	650	---	- 0.6	700	---	- 1.8	750	---	- 2.3	560	3.7	7.4	610	5.0	9.4	680	3.4	7.0
700	6.9	10.2	700	---	- 1.0	750	---	- 2.2	780	---	- 2.6	600	3.5	7.1	650	4.4	8.8	700	4.0	7.6
750	6.9	10.0	750	---	- 1.6	800	---	- 2.6				630	3.8	7.6	700	4.8	9.3	750	4.6	8.4
800	6.6	9.6	800	---	- 2.0	850	---	- 2.9				650	3.5	7.3	750	4.3	8.7	800	4.0	7.9
850	6.9	9.6	850	---	- 2.4	900	---	- 3.4				700	3.4	7.3	800	4.0	8.4	850	3.7	7.6
860	6.8	9.4	900	---	- 2.9	950	---	- 4.0				750	3.2	7.1	850	4.0	8.3	870	3.8	7.8
			950	---	- 3.4	1000	---	- 4.5				800	3.0	6.8	885	3.8	8.0			
			1000	---	- 3.9	1050	---	- 4.9				850	2.9	6.7						
			1050	---	- 4.4	1100	---	- 5.6				900	2.5	6.3						
			1070	---	- 4.8	1150	---	- 5.8				950	2.0	5.8						
						1200	---	- 6.1				1000	1.7	5.5						
												1050	1.5	5.3						
												1060	1.4	5.2						

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #29
28 October 1967
0657 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	---	---
50	---	1.9
100	---	1.8
150	---	1.7
200	---	1.4
250	---	1.2
300	---	0.9
350	---	0.7
400	---	0.4
450	---	- 0.1
500	---	- 0.5
550	---	- 0.7
600	---	- 1.1
650	---	- 1.4
700	---	- 1.6
750	---	- 1.6
800	---	- 2.0
850	---	- 2.4
900	---	- 2.8
950	---	- 3.2
1000	---	- 3.5
1050	---	- 3.8
1080	---	- 4.2

Ascn #30
28 October 1967
0825 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	---	---
50	---	---
90	---	1.7
100	---	1.6
150	---	1.2
200	---	0.6
250	---	0.2
300	---	0.0
350	---	- 0.3
400	---	- 0.4
450	---	- 0.9
500	---	- 1.2
550	---	- 1.8
600	---	- 2.1
650	---	- 2.6
680	---	- 2.4
700	---	- 2.8
750	---	- 2.7
800	---	- 2.9
850	---	- 3.4
860	---	- 3.4

Ascn #31
28 October 1967
1021 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	---	---
30	---	2.8
50	---	2.8
100	---	2.4
150	---	2.0
200	---	1.6
250	---	1.1
300	---	0.6
350	---	0.2
400	---	- 0.2
450	---	- 0.6
500	---	- 1.0
550	---	- 1.6
600	---	- 2.2
650	---	- 2.5
700	---	- 2.8
730	---	- 2.9

Ascn #32
29 October 1967
0648 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	---	---
40	---	- 3.2
50	---	- 3.2
65	---	- 3.4
100	---	- 3.0
150	---	- 2.4
200	---	0.5
250	1.7	2.5
300	1.8	2.5
330	1.9	2.6
350	1.8	2.4
400	1.5	2.0
450	1.2	1.6
500	1.1	1.4
550	0.7	1.0
600	0.5	0.7
650	0.2	0.4
700	-0.2	0.0
750	---	- 0.3
800	---	- 0.7
850	---	- 1.2
900	---	- 1.6
950	---	- 1.8
1000	---	- 1.8
1050	---	- 1.7
1070	---	- 1.6

Ascn #33
29 October 1967
0902 EST
Airport

Z(m)	WB(°C)	T(°C)
Sfc	---	---
50	---	---
100	---	---
120	1.6	2.2
150	1.0	1.7
200	0.8	1.5
250	0.1	1.3
260	0.8	2.2
300	1.0	2.4
350	0.8	2.3
400	0.6	2.2
450	0.4	1.8
500	0.0	1.4
550	-0.1	1.2
600	-0.5	0.7
650	-0.6	0.4
700	---	0.0
750	---	- 0.4
765	---	- 0.5

Ascn #34
29 October 1967
1009 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	---	---
10	3.0	4.4
50	2.4	3.8
100	2.2	3.6
150	2.0	3.4
200	2.1	3.2
250	2.1	2.6
260	1.5	2.9
300	1.3	2.7
350	1.0	2.4
400	0.6	2.2
450	0.2	1.8
500	-0.2	1.3
540	-0.2	1.3

Ascn #35
30 October 1967
0645 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	---	---
15	---	- 1.0
50	---	0.0
100	1.0	2.4
150	1.9	3.6
200	2.8	4.8
250	3.1	5.8
300	4.2	7.8
350	4.8	8.8
400	5.0	9.5
450	5.2	10.2
500	5.1	10.2
550	4.8	10.0
600	3.8	9.8
615	3.5	9.8
650	3.8	10.5
700	4.0	10.7
750	4.0	11.0
800	4.0	11.2
850	4.0	11.0
880	4.1	11.0
900	5.3	10.8
950	5.2	10.2
1000	4.9	10.0
1050	5.0	10.0
1100	5.6	9.8
1150	5.0	9.4
1200	4.6	9.4
1250	4.7	9.2
1300	4.6	8.8
1350	4.3	8.5
1380	3.9	8.3

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #36 30 October 1967 0832 EST Keystone			Ascn #37 30 October 1967 0908 EST Airport			Ascn #38 30 October 1967 1104 EST Keystone			Ascn #39 31 October 1967 0646 EST Keystone			Ascn #40 31 October 1967 0812 EST Airport			Ascn #41 31 October 1967 0859 EST Keystone			Ascn #42 31 October 1967 1016 EST Airport		
Z(m)	wB(°C)	T(°C)	Z(m)	wB(°C)	T(°C)	Z(m)	wB(°C)	T(°C)	Z(m)	wB(°C)	T(°C)	Z(m)	wB(°C)	T(°C)	Z(m)	wB(°C)	T(°C)	Z(m)	wB(°C)	T(°C)
Sfc	-0.7	0.8	Sfc	---	---	Sfc	---	---	Sfc	4.8	6.2	Sfc	---	---	Sfc	---	---	Sfc	---	---
50	0.1	1.4	50	---	---	50	7.4	11.6	50	5.2	6.9	50	---	---	50	7.3	9.6	50	---	---
100	1.2	2.8	100	---	---	100	7.4	11.6	100	6.4	9.2	100	---	---	100	7.0	10.0	100	---	---
150	1.5	3.5	120	5.2	8.4	150	7.1	11.2	150	6.6	9.4	120	7.8	10.8	150	6.9	10.2	130	9.9	14.6
200	2.0	4.3	150	4.9	8.0	200	6.8	10.8	200	7.3	11.0	150	7.2	10.6	200	6.9	10.2	150	9.2	13.8
250	2.8	5.6	200	4.2	7.3	250	6.5	10.3	250	7.7	11.6	200	7.1	10.4	250	7.2	11.6	200	9.1	13.7
300	4.0	8.1	250	4.0	7.0	300	6.0	9.8	300	7.9	12.9	250	6.8	10.0	300	7.5	12.5	250	8.6	13.0
350	4.3	9.0	300	3.6	6.6	350	5.5	9.4	350	8.2	13.3	300	6.6	10.0	350	7.5	12.6	300	8.2	12.6
400	4.6	9.6	325	3.4	6.8	400	5.5	9.1	400	8.3	13.5	350	6.5	9.9	400	7.5	12.9	350	7.6	12.4
450	4.7	9.9	330	3.4	7.4	450	4.9	8.3	450	8.2	13.6	400	6.4	10.2	450	7.5	13.4	400	7.5	12.5
500	4.6	10.1	340	4.8	9.2	500	4.5	9.6	500	8.2	14.0	450	6.6	11.0	500	7.4	13.4	420	8.2	14.0
550	4.3	10.4	350	4.4	9.0	550	4.4	9.8	550	8.2	14.1	500	7.7	13.6	550	7.3	13.4	450	7.8	13.4
600	3.8	10.8	400	4.2	9.6	600	4.1	9.4	600	7.9	13.9	550	7.8	13.8	600	7.8	13.8	500	7.6	13.4
650	3.8	11.0	435	4.7	10.1	650	3.8	9.8	650	7.9	14.1	585	8.0	14.6	650	7.8	14.0	550	8.0	14.2
700	3.5	10.9	450	4.9	11.1				700	7.8	14.2	600	7.8	14.0	700	7.5	13.6	600	8.0	14.2
750	3.8	11.2	500	4.9	11.3				750	7.7	14.2	650	7.7	14.2	750	7.2	13.4	640	7.9	14.1
800	4.9	11.5	550	3.9	10.9				800	7.3	13.8	700	7.6	13.8	770	7.2	13.4			
830	5.5	11.4	600	4.1	11.3				850	7.3	13.8	750	7.5	13.5						
			650	4.1	11.4				900	7.1	13.4	770	7.4	13.4						
			700	4.2	11.7				950	7.0	13.1									
			750	4.1	11.7				1000	6.6	12.6									
			770	4.0	11.6				1050	6.6	12.6									
									1100	7.1	13.4									
									1125	7.0	13.2									

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #43
31 October 1967
1135 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	---	---
15	11.4	16.6
50	11.2	16.4
100	10.9	16.0
150	10.2	15.3
200	10.1	15.0
250	10.0	14.6
300	9.6	14.2
350	9.2	13.8
400	8.8	13.8
450	8.6	13.4
500	8.4	13.0
550	7.5	12.8
600	7.3	12.4
650	7.0	12.2
700	6.8	11.8
750	6.6	11.2
770	6.5	11.1

Ascn #283
8 April 1969
0652 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	2.1	2.8
7	1.0	1.5
50	0.9	1.4
67	0.8	1.4
100	1.7	3.0
150	4.0	9.2
200	5.1	11.3
250	5.4	12.0
257	5.6	12.2
300	5.7	12.4
350	5.6	12.2
400	5.8	12.6
450	5.7	12.5
500	5.5	12.6
550	5.3	12.5
600	5.3	12.3
650	5.2	12.0
700	5.0	11.8
750	4.3	11.5
800	3.6	11.2
850	3.3	10.9
900	3.1	10.5
950	3.1	10.2
1000	2.9	9.8
1050	2.9	9.5
1087	2.6	9.2

Ascn #284
8 April 1969
0810 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	3.8	5.2
50	2.8	4.0
72	2.5	4.0
100	3.0	5.3
150	3.1	7.7
200	4.1	10.1
250	3.9	11.3
300	5.2	12.2
350	5.1	12.1
400	4.8	12.0
450	4.8	12.0
500	4.8	11.9
550	4.8	11.7
600	4.8	11.6
650	4.4	11.4
700	3.7	11.4
750	3.2	11.1
800	3.3	10.8
850	3.1	10.7
900	3.3	10.6
950	3.1	10.1
1000	2.0	10.1
1050	1.5	10.2
1100	2.2	10.0

Ascn #285
8 April 1969
1015 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	8.8	16.4
50	8.2	15.5
100	7.8	15.4
150	7.8	14.9
200	7.5	14.6
250	7.1	14.3
300	6.8	14.0
350	6.8	13.6
400	6.6	13.0
450	6.1	13.0
500	5.8	12.6
550	4.8	12.4
600	4.4	12.0
650	4.7	11.5
700	4.3	11.3
750	3.0	11.7
800	3.7	11.6
850	2.9	11.1
900	2.7	10.7
950	3.2	10.3
1000	3.0	10.4
1050	2.3	9.9
1100	1.7	9.5
1110	1.8	9.6

Ascn #286
8 April 1969
1120 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	9.5	20.3
50	8.9	19.1
100	8.6	18.7
150	8.1	17.9
200	7.9	17.5
250	7.7	16.9
300	7.6	16.6
350	7.4	16.3
400	7.0	15.8
450	6.8	15.4
500	6.3	14.9
550	6.2	14.2
600	6.0	13.8
650	5.5	13.1
700	5.0	12.9
750	4.7	12.3
800	4.4	11.8
850	4.2	11.4
900	3.4	11.1
950	3.2	10.8
1000	3.0	10.4
1050	3.6	10.2
1088	3.0	9.4

Ascn #287
9 April 1969
0641 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	7.4	9.8
9	6.6	7.8
50	6.7	10.4
100	7.1	12.1
150	8.1	14.7
200	8.6	16.1
250	9.2	17.3
300	9.0	17.0
350	8.9	17.0
400	8.8	16.9
450	8.6	16.8
500	8.6	16.8
536	8.8	17.6
550	8.6	17.4
600	8.6	17.4
650	8.5	17.2
700	8.4	17.0
750	8.4	16.6
800	8.2	16.2
850	8.0	15.7
900	7.7	15.2
950	7.6	14.8
1000	7.4	14.4
1050	7.0	13.9
1096	6.8	13.5

Ascn #288
9 April 1969
0823 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	9.8	14.0
50	8.3	13.0
100	8.3	14.0
150	8.2	14.7
200	8.6	15.6
250	8.7	15.9
300	8.5	15.9
350	8.6	16.1
400	8.5	16.2
450	8.5	16.3
500	8.6	17.4
550	8.6	17.6
600	8.5	17.5
650	8.3	17.4
700	8.2	17.2
750	8.1	17.0
800	7.9	16.6
850	7.6	16.2
900	7.4	15.7
950	7.1	15.3
1000	6.9	14.8
1050	6.7	14.4
1095	6.5	14.0

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #288 9 April 1969 0857 EST Keystone			Ascn #290 9 April 1969 1051 EST Keystone			Ascn #291 9 April 1969 1317 EST Keystone			Ascn #292 10 April 1969 0649 EST Keystone			Ascn #293 10 April 1969 0847 EST Keystone			Ascn #294 10 April 1969 0947 EST Keystone			Ascn #295 10 April 1969 1348 EST Keystone		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	11.3	18.1	Sfc	12.6	23.2	Sfc	12.7	25.3	Sfc	14.2	16.6	Sfc	14.1	17.5	Sfc	13.4	17.8	Sfc	15.0	17.2
50	11.4	17.0	50	11.4	21.8	50	13.3	25.8	50	14.1	16.6	50	13.5	17.7	50	13.0	18.2	50	14.1	16.9
100	10.4	18.2	100	10.9	21.1	100	11.8	24.0	100	13.9	16.4	100	13.2	17.3	100	12.7	17.8	100	13.9	16.3
150	11.2	18.6	150	10.7	20.6	150	11.5	23.5	150	13.7	16.2	150	12.9	16.9	150	12.5	17.0	150	13.5	15.8
200	11.1	18.4	200	10.5	20.2	200	11.1	22.9	200	13.5	16.1	200	12.5	16.7	200	12.3	16.4	200	13.3	15.5
250	9.5	18.0	250	10.3	19.7	250	10.9	22.4	250	13.3	16.1	250	12.0	16.4	250	12.2	16.2	250	13.1	15.2
300	9.7	17.6	300	10.0	19.2	300	12.6	22.0	300	13.2	16.0	300	11.6	16.2	300	12.3	16.1	300	12.8	14.8
350	9.3	17.2	350	9.6	18.6	350	12.4	21.4	350	12.8	15.4	350	11.2	16.1	350	11.8	15.2	350	11.8	14.4
400	8.9	16.8	400	9.4	18.3	400	10.2	21.0	400	12.5	15.5	400	10.8	15.6	400	11.6	14.9	400	11.3	14.0
450	8.6	16.9	450	9.3	18.1	450	10.0	20.6	450	12.2	14.8	450	10.6	15.0	450	11.4	14.4	450	11.4	13.6
500	8.4	17.1	500	8.9	17.4	500	9.6	19.9	500	12.0	14.2	500	10.4	15.0	500	11.4	14.2	500	11.3	12.9
550	8.3	17.3	550	8.7	16.9	550	9.4	19.4	550	11.7	13.4	550	10.2	14.6	550	11.0	13.6	550	11.3	12.7
600	8.1	17.7	600	8.5	16.6	600	9.1	18.9	600	11.6	13.3	600	10.0	14.0	600	10.9	13.3	600	10.9	12.1
650	7.9	17.4	650	8.1	16.0	650	8.8	18.4	650	11.4	12.8	650	9.7	13.8	650	10.5	12.8	650	10.1	11.8
700	7.7	17.2	700	7.8	15.6	700	8.4	17.8	700	10.9	12.4				700	10.6	12.5	700	10.0	11.4
750	7.6	17.0	750	7.6	15.2	750	8.1	17.3	750	10.8	12.0				750	10.1	11.8	743	9.1	10.9
800	7.4	16.6	800	7.2	15.1	800	8.1	16.9	800	10.5	11.9				800	9.9	11.4			
850	7.3	16.3	850	7.2	15.0	850	7.8	16.4	850	10.1	11.5				850	9.7	11.0			
900	7.6	15.9	900	7.2	14.2	900	7.5	15.9	900	9.8	11.2				900	9.4	10.6			
950	7.5	15.5	935	6.8	15.4	950	7.1	15.4	950	9.6	10.7				950	9.2	10.2			
1000	7.2	15.0	950	6.9	15.4	1000	6.9	14.8	1000	9.4	10.4				1000	9.0	9.9			
1050	6.8	14.6	1000	6.5	14.9	1050	6.7	14.4	1050	9.2	10.3				1050	8.7	9.5			
1100	6.6	14.2	1050	6.3	14.5	1100	6.4	13.9	1100	8.9	9.8				1063	8.5	9.2			
			1100	5.9	13.9	1119	6.4	13.8	1110	8.9	9.7									
			1135	5.8	13.7															

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #296 11 April 1969 0636 Est Keystone			Ascn #297 11 April 1969 1009 EST Keystone			Ascn #298 11 April 1969 1113 EST Keystone			Ascn #299 11 April 1969 1353 EST Keystone			Ascn #300 12 April 1969 0700 EST Keystone			Ascn #301 12 April 1969 0845 EST Keystone			Ascn #302 12 April 1969 1052 EST Keystone		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	3.2	5.8	Sfc	3.8	7.0	Sfc	4.5	8.4	Sfc	6.0	11.8	Sfc	---	0.3	Sfc	1.8	5.5	Sfc	3.7	10.4
15	3.2	6.0	50	2.8	6.2	50	3.3	7.2	50	4.8	10.6	30	---	- 0.7	50	1.7	5.3	50	4.8	9.0
50	3.1	5.8	100	2.6	5.8	100	2.9	6.8	100	4.6	10.2	50	---	- 0.4	100	1.5	5.0	100	2.2	8.2
100	2.8	5.4	150	2.2	5.4	150	2.7	6.5	150	4.6	10.0	100	---	0.7	150	0.9	4.7	150	2.2	8.2
150	2.5	5.0	200	1.8	4.8	200	2.5	6.0	200	4.4	9.7	150	---	1.7	200	0.3	4.2	200	2.0	7.6
200	2.2	4.6	250	1.5	4.3	250	1.9	5.4	250	4.0	9.0	200	---	2.1	250	0.1	3.8	250	1.6	7.3
250	2.0	4.2	300	1.2	3.9	300	1.4	4.8	300	3.7	8.6	220	---	2.0	300	-0.1	3.5	300	1.6	7.0
300	1.7	3.7	350	0.7	3.4	350	1.6	4.6	350	3.3	8.1	250	---	2.2	350	-0.4	3.0	350	1.4	6.8
350	1.2	3.2	400	0.9	3.2	400	1.0	4.0	400	2.9	7.5	300	---	2.9	400	-1.0	2.6	400	1.6	5.8
400	0.8	2.8	450	0.0	2.2	450	0.9	3.5	450	2.5	6.9	350	---	2.7	450	-1.3	2.1	450	1.3	5.3
450	0.3	2.4	500	0.0	2.0	468	1.0	3.8	500	2.3	6.5	400	---	2.4	500	-1.1	1.7	500	0.0	4.8
500	-0.1	2.0	550	-0.4	1.6	500	0.9	3.5	550	1.9	5.9	450	---	2.2	550	-0.4	1.2	550	-0.2	4.4
550	-0.5	1.5	600	-1.0	0.8	550	0.7	3.0	600	2.0	5.8	500	---	2.2	600	-1.8	0.6	600	-0.4	4.0
600	-0.8	1.0	650	-1.4	0.4	600	0.2	2.4	650	1.9	5.4	550	---	2.1	650	-1.9	0.6	650	-0.5	3.9
650	-1.3	0.5	700	---	- 0.2	650	0.0	2.0	700	1.4	4.8	600	---	1.8	700	-2.1	0.3	700	-0.7	3.5
700	---	0.0	750	---	- 0.6	700	-0.4	1.4	750	1.2	4.4	650	---	1.6	750	-1.9	0.2	750	-1.1	3.0
750	---	- 0.5	800	---	- 1.0	750	-0.8	0.8	800	0.8	3.7	700	---	1.3	800	---	- 0.4	800	-1.4	2.5
800	---	- 1.2	850	---	- 1.4	800	-1.0	0.4	850	0.8	3.0	750	---	1.0	850	---	- 0.2	850	-1.6	2.2
850	---	- 1.6	900	---	- 2.1	850	---	- 0.1	900	-0.2	2.4	800	---	0.8	900	---	- 0.5	900	-2.2	1.5
900	---	- 2.2	950	---	- 2.4	900	---	- 0.6	950	-0.3	2.1	850	---	0.6	950	---	- 0.8	950	-3.1	0.7
950	---	- 2.5	1000	---	- 2.9	950	---	- 0.8	1000	-0.7	1.6	900	---	0.4	1000	---	- 1.1	1000	-3.1	0.1
1000	---	- 3.0	1050	---	- 3.1	1000	---	- 1.4	1050	-1.1	1.1	950	---	0.2	1050	---	- 1.4	1050	---	- 0.2
1050	---	- 3.3	1100	---	- 3.6	1050	---	- 2.4	1100	-1.2	0.7	1000	---	0.1	1100	---	- 1.5	1100	---	- 0.8
1095	---	- 3.6				1100	---	- 1.9	1140	-1.6	0.2	1050	---	0.3	1131	---	- 1.0	1115	---	- 1.0
						1150	---	- 2.6				1100	---	0.3						
												1150	---	0.2						
												1200	---	- 0.2						
												1250	---	- 0.5						
												1270	---	- 0.4						

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #303 12 April 1969 1230 EST Keystone			Ascn #304 14 April 1969 0644 EST Keystone			Ascn #305 14 April 1969 0759 EST Keystone			Ascn #306 14 April 1969 0850 EST Keystone			Ascn #307 14 April 1969 1019 EST Keystone			Ascn #308 14 April 1969 1121 EST Keystone			Ascn #309 15 April 1969 0644 EST Keystone		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	4.4	12.0	Sfc	6.4	8.2	Sfc	6.6	9.8	Sfc	7.8	12.9	Sfc	9.8	17.6	Sfc	9.4	17.8	Sfc	9.6	13.0
50	4.2	11.4	43	5.2	7.0	50	3.6	7.2	50	7.1	12.3	50	8.8	16.2	50	8.8	17.4	15	9.2	13.2
100	3.6	10.6	50	5.1	7.6	100	5.3	10.1	100	6.8	12.1	100	8.5	15.6	100	8.4	17.0	50	9.1	13.1
150	3.8	10.5	100	5.2	9.2	150	5.4	10.5	150	6.5	12.0	150	8.1	15.1	150	8.4	16.9	100	9.0	12.8
200	3.7	10.6	150	4.6	10.2	200	5.4	11.0	200	6.5	12.1	200	8.0	14.8	200	7.9	16.2	150	8.9	12.7
250	3.1	9.6	200	5.9	11.1	250	5.8	11.8	250	6.1	11.9	250	7.6	14.3	250	7.8	15.7	200	8.6	12.4
300	2.9	9.2	250	6.3	12.0	300	6.0	12.1	260	6.3	12.7	300	7.4	13.8	300	7.6	15.3	250	8.5	12.2
350	2.4	8.5	300	6.5	12.2	350	6.1	12.4	300	6.4	13.0	350	7.2	13.4	350	7.5	15.0	300	8.3	11.8
400	1.8	7.7	350	6.6	12.8	400	6.2	12.6	350	6.4	13.1	400	6.8	12.9	400	7.3	14.7	350	8.2	11.6
450	1.8	7.6	400	6.5	12.6	450	6.3	12.7	400	6.4	13.0	450	6.6	12.4	450	6.7	14.0	400	8.2	11.4
500	1.4	7.1	450	6.8	13.0	500	6.4	12.8	450	6.4	12.9	500	6.6	12.2	500	6.4	13.4	450	8.1	11.1
550	1.3	6.9	500	6.7	12.9	550	6.3	12.6	500	6.2	12.7	525	6.4	12.0	550	6.1	13.0	500	8.0	10.9
600	1.1	6.6	550	6.6	12.8	600	6.2	12.3	550	6.0	12.3	550	6.0	12.4	600	5.6	12.4	550	8.2	10.8
650	0.9	6.1	600	6.5	12.7	650	5.9	11.9	600	5.9	12.1	600	6.0	12.2	650	5.5	12.0	600	8.1	10.7
700	0.4	5.6	650	6.3	12.5	700	5.8	11.7	650	5.7	11.8	650	5.7	11.8	700	4.7	11.8	650	8.1	10.5
750	0.2	5.2	700	6.1	12.2	734	5.6	12.0	700	5.4	11.3	700	5.4	11.5	750	4.2	11.4	700	8.0	10.2
800	-0.1	4.7	750	5.8	11.7	750	5.4	12.0	750	5.2	10.9	750	5.0	11.0	800	3.9	11.2	750	7.8	9.8
850	-0.5	4.1	800	5.4	11.2	800	5.2	11.8	785	5.1	10.7	800	5.0	10.6	850	3.5	10.9	800	7.4	9.4
900	-0.9	3.5	823	5.3	11.0	850	5.2	12.0	800	5.2	11.2	850	4.7	10.2	900	3.0	10.6	850	7.5	9.0
950	-1.3	2.9	850	5.2	11.2	900	4.6	11.4	850	4.7	10.9	900	4.4	10.0	950	2.9	10.3	900	7.3	8.6
1000	-1.6	2.4	900	5.1	11.0	950	4.2	10.9	900	4.5	10.5	950	3.9	9.6	1000	2.7	10.0	950	7.2	8.3
1050	-2.0	1.9	950	4.8	10.6	1000	4.1	10.5	950	4.3	10.2	1000	3.2	9.6	1050	2.6	9.6	1000	6.9	7.9
1100	-2.4	1.4	1000	4.6	10.2	1050	4.0	10.1	1000	4.2	10.0	1050	3.3	9.3	1100	2.4	9.2	1050	6.6	7.6
1126	-2.5	1.2	1050	4.6	10.0	1100	3.8	9.8	1050	4.0	9.8	1100	3.8	9.4	1150	2.1	8.8	1100	6.4	7.3
			1100	4.8	9.8	1112	3.7	9.6	1100	3.5	9.6	1118	3.6	9.3	1200	2.5	8.3	1150	6.2	6.9
									1118	3.4	9.6				1250	2.8	8.5	1200	7.0	7.4
															1300	2.3	8.3			
															1350	2.4	8.0			
															1364	2.5	8.0			

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #310 15 April 1969 0843 EST Keystone			Ascn #311 17 April 1969 0644 EST Keystone			Ascn #312 17 April 1969 0821 EST Keystone			Ascn #313 17 April 1969 0920 EST Keystone			Ascn #314 17 April 1969 1111 EST Keystone			Ascn #315 18 April 1969 0631 EST Keystone			Ascn #316 18 April 1969 0826 EST Keystone		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	10.4	12.8	Sfc	8.3	8.6	Sfc	12.0	13.6	Sfc	14.7	19.3	Sfc	15.6	24.0	Sfc	14.7	19.5	Sfc	14.6	17.6
50	9.8	12.2	50	6.7	6.9	50	10.4	11.8	50	14.4	19.2	50	14.2	22.6	10	14.0	17.4	18	14.0	17.0
100	9.6	11.7	100	8.1	9.0	100	11.4	14.4	100	14.0	18.7	100	13.9	22.1	50	14.3	19.5	50	13.4	17.8
150	9.3	11.4	150	11.1	13.0	150	11.7	14.9	150	13.8	18.6	150	13.9	21.8	100	14.3	19.9	68	13.8	19.1
200	9.0	11.0	200	11.4	15.0	200	11.8	15.8	200	14.5	19.2	200	13.6	21.4	150	14.3	19.8	100	13.8	19.2
250	8.6	10.7	250	12.2	16.6	250	12.2	17.2	250	13.6	18.0	235	13.3	20.9	200	14.0	19.4	150	13.6	19.0
300	8.6	10.4	300	12.4	17.5	300	12.2	17.4	300	13.0	17.6	250	13.7	21.3	250	13.9	19.3	200	13.5	18.8
350	8.5	10.1	350	12.5	18.0	350	12.0	17.2	350	12.5	17.2	300	13.2	20.6	300	13.9	19.2	250	13.6	18.8
400	8.7	10.2	400	12.6	17.6	400	11.9	17.1	400	12.2	17.1	350	13.0	20.0	350	13.9	19.1	293	13.2	18.4
450	8.8	10.2	450	12.4	17.3	450	11.9	16.9	450	11.9	16.6	400	12.9	19.6	400	13.6	18.7	300	13.5	18.8
500	8.8	10.1	500	12.1	16.9	500	11.5	16.6	500	11.6	16.4	450	12.2	18.6	450	13.5	18.6	350	13.2	18.3
550	8.7	9.8	550	12.0	16.6	550	11.3	16.4	533	11.8	15.8	500	12.0	18.1	500	13.2	18.2	400	13.0	17.9
600	8.6	9.6	600	11.6	16.3	600	11.1	16.0	550	11.5	16.1	550	11.6	17.4	550	13.2	18.0	450	12.8	17.4
650	8.5	9.4	650	11.3	16.0	650	10.8	15.8	600	11.2	15.6	600	11.4	16.9	600	13.0	17.7	500	12.6	17.0
700	8.4	9.2	700	10.5	15.8	700	10.3	15.5	650	11.0	15.6	650	11.0	16.5	650	13.0	17.5	550	12.2	16.4
750	8.3	9.0	750	10.0	15.8	750	9.6	15.4	700	10.7	15.2	700	11.0	16.4	700	12.7	17.0	600	12.1	16.0
800	8.0	8.6	800	8.6	15.8	800	9.3	15.1	750	10.5	14.9	750	10.6	15.6	750	12.4	16.6	650	11.9	15.5
850	8.0	8.5	850	7.4	16.0	850	9.2	14.7	800	10.2	14.5	800	10.2	15.1	800	12.2	16.4	700	11.6	15.1
900	8.0	8.4	900	7.4	15.8	900	9.0	14.3	850	9.8	14.0	850	9.8	14.5	850	11.9	15.8	750	11.3	14.7
918	8.2	8.6	950	7.3	15.6	930	9.0	14.2	900	9.6	13.8	900	9.7	14.2	900	11.7	15.4	800	11.1	14.3
			1000	6.9	15.3				950	9.3	13.4	950	9.4	13.7	950	11.6	15.0	850	10.9	13.9
			1050	6.7	14.9				1000	8.8	13.2	1000	9.4	13.3	1000	11.3	14.6	900	10.6	13.4
			1100	6.5	14.6				1050	8.9	13.0	1050	9.2	13.0	1050	11.1	14.2	950	10.6	13.2
			1109	6.7	14.5				1100	8.3	12.7	1100	8.9	12.4	1080	10.8	13.8	1000	10.3	12.7
																		1050	10.1	12.3
																		1100	9.8	11.8

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #317 18 April 1969 0950 EST Keystone			Ascn #318 28 April 1969 0632 EST Keystone			Ascn #319 28 April 1969 0815 EST Keystone			Ascn #320 28 April 1969 0907 EST Keystone			Ascn #321 28 April 1969 1016 EST Keystone			Ascn #322 30 April 1969 0542 EST Keystone			Ascn #323 30 April 1969 0651 EST Keystone		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	15.0	19.6	Sfc	13.3	17.6	Sfc	14.3	19.3	Sfc	14.2	16.0	Sfc	14.3	15.8	Sfc	5.3	6.2	Sfc	5.4	6.6
50	14.6	19.8	50	13.7	19.0	30	14.5	20.1	50	14.1	16.2	26	14.2	16.2	50	5.1	6.1	50	4.7	5.8
100	14.6	19.8	100	13.8	19.4	50	14.4	19.8	100	13.8	16.1	50	14.3	16.2	100	4.9	5.9	100	4.2	5.2
110	14.8	20.2	150	13.9	19.7	100	14.1	19.6	150	13.6	15.8	100	14.0	16.0	150	4.6	5.5	150	4.0	4.8
150	14.6	19.7	200	13.2	19.2	150	14.0	19.0	200	13.3	15.8	150	13.6	15.4	200	4.2	5.0	200	3.6	4.4
200	14.2	19.0	250	14.0	20.3	200	13.6	18.5	250	13.0	15.4	200	13.6	15.4	250	3.9	4.6	250	3.2	3.9
250	13.9	18.7	300	13.8	20.0	250	13.2	17.9	300	12.8	15.2	250	13.2	14.9	300	3.5	4.1	300	3.0	3.6
300	13.6	18.2	350	13.9	19.9	300	13.1	17.7	350	12.7	15.1	300	12.9	14.3	350	3.2	3.7	350	2.8	3.2
350	13.4	17.8	400	13.7	19.7	350	12.7	17.1	400	12.5	14.9	350	12.7	14.2	400	3.0	3.4	400	2.3	2.7
400	13.1	17.3	450	13.7	19.9	400	12.5	16.7	450	12.3	14.9	400	12.5	13.9	450	2.7	3.0	450	2.0	2.5
450	13.0	16.9	500	13.6	19.6	450	12.1	16.0	500	11.8	14.8	450	12.1	13.6	500	2.3	2.7	500	1.6	2.6
500	12.6	16.4	550	13.5	19.3	500	11.9	15.7	550	11.6	15.0	500	11.9	13.5	522	2.3	3.1	550	1.2	2.4
550	12.5	16.0	600	13.3	18.9	550	11.4	15.0	600	11.3	14.5	550	11.6	13.4	550	1.8	3.1	600	1.0	2.0
600	12.2	15.5	650	12.9	18.3	600	11.2	14.6	650	11.1	14.3	600	11.3	13.0	600	1.6	2.9	650	0.4	1.6
650	11.9	14.9	700	12.7	17.8	650	11.1	14.3	700	11.0	14.0	650	11.1	12.8	650	1.4	2.8	700	0.3	1.4
700	11.7	14.5	750	12.5	17.4	700	10.8	14.0	750	11.2	13.8	700	11.0	12.7	700	1.3	2.8	750	0.0	1.2
750	11.7	14.1	800	12.4	17.0	720	11.0	14.0	800	11.2	13.4	750	10.6	12.2	750	0.9	2.3	800	-0.2	1.2
800	11.4	13.6	850	12.2	16.5	750	10.6	13.6	850	10.8	12.8	800	10.5	12.1	800	0.6	1.8	850	-0.3	1.0
850	11.2	13.2	900	12.0	16.0	800	10.3	13.2	900	10.6	12.4	821	10.5	12.0	850	0.2	1.4	900	-0.6	0.6
900	11.0	13.0	950	11.7	15.5	850	10.1	12.8	950	10.2	11.8				900	0.5	1.0	950	-0.9	0.2
950	10.7	12.6	1000	11.4	15.1	900	9.7	12.2	1000	10.1	11.6				950	0.4	0.4	1000	---	- 0.2
1000	10.3	12.1	1050	11.2	14.7	950	10.1	12.3	1050	9.8	11.1				1000	---	- 0.2	1050	---	- 0.6
1050	10.1	11.8	1100	10.8	14.2	1000	9.9	12.0	1100	9.4	10.5				1050	---	- 0.5	1100	---	- 1.0
1095	9.9	11.4				1050	10.0	11.7	1108	9.4	10.4				1100	---	- 1.0	1112	---	1.1
						1100	9.3	11.1												

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #324 30 April 1969 0756 EST Keystone			Ascn #325 30 April 1969 0911 EST Keystone			Ascn #326 30 April 1969 0951 EST Keystone			Ascn #327 30 April 1969 1118 EST Keystone			Ascn #328 1 May 1969 0545 EST Keystone			Ascn #329 1 May 1969 0725 EST Keystone			Ascn #330 1 May 1969 0813 EST Keystone		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	4.8	6.2	Sfc	5.8	8.0	Sfc	5.6	8.2	Sfc	6.6	10.2	Sfc	2.6	2.8	Sfc	4.6	5.8	Sfc	6.9	9.6
50	4.0	5.4	50	4.6	6.6	50	5.4	7.8	50	6.4	10.0	10	1.2	1.4	50	3.6	4.8	50	6.0	9.0
100	3.7	5.1	100	4.3	6.2	100	5.2	7.4	100	6.2	9.6	50	1.3	1.5	64	3.9	5.9	100	6.0	8.5
150	3.3	4.4	150	4.1	5.9	150	4.9	7.0	150	5.8	9.0	100	1.1	2.1	100	3.8	6.0	150	5.6	8.4
200	3.0	4.0	200	3.8	5.6	200	4.8	6.8	200	5.3	8.3	110	3.6	5.2	150	4.0	6.7	200	5.1	8.1
250	2.8	3.6	250	3.5	5.0	250	3.8	6.0	250	4.8	7.8	150	3.6	5.6	200	4.1	7.1	250	5.0	8.0
300	2.3	3.1	300	3.0	4.6	300	3.4	5.5	300	4.6	7.4	200	4.0	6.3	250	4.1	7.1	300	4.7	7.5
350	2.0	2.6	350	2.6	4.0	350	3.5	5.4	350	4.5	7.2	240	4.1	6.7	300	4.1	7.2	350	4.5	7.4
400	1.8	2.4	400	2.5	3.7	400	3.0	4.8	400	4.2	6.6	250	4.3	7.2	350	4.2	7.4	400	4.2	7.0
450	1.5	1.8	450	2.1	3.2	450	2.6	4.3	450	3.6	6.0	260	4.7	7.7	400	4.1	7.3	450	3.9	6.7
500	1.2	1.4	500	1.9	2.9	500	2.3	3.8	500	3.3	5.5	300	4.7	7.8	450	4.3	7.4	470	3.8	6.6
550	0.7	1.0	550	1.3	2.1	550	2.2	3.8	550	3.1	5.2	350	4.6	7.6	500	4.3	7.5	480	4.2	7.3
588	0.4	0.8	600	0.9	1.9	600	1.9	3.3	600	2.7	4.6	400	4.4	7.3	550	4.2	7.4	500	3.9	6.9
600	0.6	1.4	650	0.6	1.3	650	1.7	2.9	650	2.3	4.2	450	4.4	7.2	600	3.7	6.7	540	3.5	5.8
628	0.1	1.3	700	0.3	0.8	700	0.9	2.1	700	2.0	3.8	500	4.6	7.4	650	3.6	6.6	550	3.8	6.4
632	0.2	1.8	750	0.0	0.4	750	0.6	1.8	750	1.8	3.4	550	4.6	7.4	700	3.4	6.5	600	3.9	7.0
650	0.1	1.7	800	-0.3	0.1	800	0.1	1.2	800	1.5	2.9	600	4.4	7.2	750	3.2	6.2	650	3.6	6.6
700	-0.2	1.4	830	---	- 0.4	850	-0.2	0.5	850	1.2	2.6	650	4.1	6.9	800	2.8	5.8	700	3.4	6.3
750	-0.6	1.0	835	---	0.5	900	-0.6	0.0	900	0.7	2.0	700	3.9	6.8	850	2.6	5.6	750	3.2	6.1
800	-0.9	0.8	850	---	- 0.4	950	---	- 0.4	950	0.4	1.6	750	3.6	6.6	900	2.4	5.3	800	2.9	5.9
850	-1.2	0.6	855	---	0.2	1000	---	- 1.1	1000	-0.1	1.2	800	3.3	6.3	950	2.3	5.2	850	2.6	5.6
900	-1.4	0.4	875	---	- 0.6	1010	---	- 0.6	1050	-0.4	0.8	850	3.1	6.0	1000	2.0	4.7	900	2.4	5.4
950	-1.2	0.0	895	---	0.0	1050	---	- 1.3	1100	-0.8	0.4	900	2.8	5.6	1050	1.7	4.2	950	2.3	5.1
1000	---	- 0.4	900	---	- 0.6	1100	---	- 1.2	1119	-0.8	0.2	950	2.6	5.2	1100	1.4	3.8	1000	2.0	4.7
1050	---	- 0.8	950	---	- 0.9							1000	1.8	4.4				1050	1.7	4.3
1100	---	- 1.4	960	---	- 0.5							1050	2.0	4.4				1100	1.5	3.9
1150	---	- 2.0	1000	---	- 0.6							1100	1.8	4.1				1120	1.4	3.8
			1050	---	- 0.9							1150	1.6	3.8						
			1100	---	- 1.8							1160	1.4	3.6						

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #331 1 May 1969 0925 EST Keystone			Ascn #332 1 May 1969 0958 EST Keystone			Ascn #333 1 May 1969 1119 EST Keystone			Ascn #334 2 May 1969 0556 EST Keystone			Ascn #335 2 May 1969 0752 EST Keystone			Ascn #336 2 May 1969 0847 EST Keystone			Ascn #337 2 May 1969 0945 EST Keystone		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	8.2	12.4	Sfc	8.4	13.2	Sfc	9.3	14.7	Sfc	5.8	6.2	Sfc	7.9	10.0	Sfc	10.8	14.8	Sfc	11.6	17.4
50	7.6	11.8	50	8.2	12.8	50	8.9	14.1	10	4.0	4.2	26	7.2	9.0	50	9.9	13.9	50	11.3	16.9
100	7.2	11.4	100	8.0	12.4	100	8.9	14.0	30	3.4	3.8	50	7.0	9.1	100	9.6	13.8	100	10.8	16.4
150	7.2	11.3	150	7.7	12.1	150	8.4	13.4	50	3.4	4.0	100	6.6	9.4	150	9.5	13.8	150	10.5	16.0
200	7.0	10.9	200	7.5	11.8	200	8.0	12.9	100	4.9	6.4	150	7.7	11.6	200	9.3	13.5	200	10.2	15.6
250	6.5	10.2	250	7.2	11.2	250	7.8	12.6	150	7.3	10.8	166	8.0	12.2	250	8.9	13.0	250	9.7	15.2
300	6.3	9.8	300	6.7	10.6	300	7.7	12.4	200	8.4	12.7	200	7.9	12.2	300	8.3	12.5	300	9.3	14.7
350	6.2	9.4	350	6.1	9.9	350	7.1	11.6	230	8.6	13.0	250	8.1	12.5	350	8.0	12.2	350	9.5	14.2
400	5.8	9.0	400	5.8	9.6	400	6.6	11.0	250	8.7	13.0	300	8.2	12.5	400	7.9	12.1	400	9.0	13.8
450	5.5	8.5	450	5.6	9.2	450	6.6	10.8	300	8.6	12.8	350	8.1	12.5	450	7.7	11.9	450	8.6	13.6
500	5.2	8.1	500	5.4	8.7	500	6.1	10.2	350	8.5	12.9	400	8.0	12.3	479	7.7	12.5	500	8.5	13.0
550	4.8	7.6	550	5.2	8.5	550	5.6	9.8	400	8.5	12.9	450	7.8	12.0	500	7.5	12.3	550	8.1	12.6
600	4.2	7.2	600	4.9	8.0	600	5.4	9.5	450	8.4	12.8	500	7.6	11.7	539	7.5	12.5	572	7.5	13.0
640	3.9	6.6	650	4.6	7.5	650	5.1	8.9	500	8.3	12.7	526	7.5	11.9	550	7.5	12.5	600	7.1	12.9
			700	4.3	7.1	700	4.9	8.6	550	8.0	12.2	550	7.4	11.9	600	7.1	12.0	650	6.8	12.6
			750	4.1	6.7	750	4.6	8.1	600	7.7	12.0	600	7.3	11.8	650	7.0	12.4			
			800	3.6	6.1	800	4.2	7.5	650	7.6	11.8	650	7.5	12.0	700	6.8	12.0			
			850	3.1	5.7	850	3.9	7.0	700	7.4	11.6	700	6.8	11.4	750	6.4	11.6			
			900	2.6	5.3	900	3.5	6.5	750	7.2	11.9	750	6.7	11.3	800	6.2	11.4			
			950	2.5	4.7	908	3.6	6.6	800	7.4	11.8	800	6.4	11.4	850	5.7	10.9			
			1000	2.0	4.6	950	3.4	6.2	850	7.2	11.4	850	6.1	11.0	900	5.6	10.6			
			1050	1.7	4.1	1000	3.1	5.8	900	6.8	11.2	900	5.9	10.7	950	5.2	10.1			
			1100	1.4	3.8	1050	2.8	5.4	950	6.4	10.8	950	5.6	10.2	1000	5.0	9.8			
			1130	1.1	3.4	1100	2.6	5.0	1000	6.1	10.4	1000	5.4	10.0	1050	4.6	9.3			
						1120	2.2	4.6	1050	5.8	9.9	1050	5.1	9.6	1100	4.5	9.0			
									1100	5.6	9.5	1100	4.8	9.2	1124	4.3	8.8			
									1123	5.3	9.2	1116	4.7	9.1						

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #338 2 May 1969 1040 EST Keystone			Ascn #339 3 May 1969 0544 EST Keystone			Ascn #340 3 May 1969 0646 EST Keystone			Ascn #341 3 May 1969 0827 EST Keystone			Ascn #342 3 May 1969 0956 EST Keystone			Ascn #343 5 May 1969 0552 EST Keystone			Ascn #344 5 May 1969 0716 EST Keystone		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	12.4	19.6	Sfc	9.1	9.8	Sfc	10.1	12.9	Sfc	14.0	19.0	Sfc	16.0	22.6	Sfc	6.7	7.3	Sfc	9.8	11.8
50	11.3	18.6	9	7.7	8.2	7	9.8	12.2	50	13.4	18.6	50	15.9	22.5	10	7.7	8.2	50	9.4	11.8
100	11.2	18.2	19	7.7	8.3	50	9.8	13.6	100	13.3	18.5	100	15.7	22.3	30	7.4	7.9	100	9.3	11.9
150	10.7	17.7	50	9.0	12.0	100	10.0	14.0	150	13.3	18.3	150	15.0	21.4	50	8.2	9.4	150	9.0	12.2
200	10.7	17.3	100	9.7	13.4	150	10.3	14.7	200	13.1	18.1	200	14.8	20.9	70	8.6	10.6	200	9.2	12.4
250	10.4	16.9	150	10.4	14.8	200	11.2	16.0	250	13.1	18.0	250	14.4	20.4	100	8.5	10.7	250	9.0	12.2
300	10.4	16.8	200	11.1	15.9	250	11.5	16.5	300	12.6	17.6	300	14.2	20.0	150	9.1	11.8	300	9.0	12.6
350	9.8	16.0	250	12.0	17.2	300	11.8	17.0	350	12.8	17.4	350	13.8	19.2	200	9.3	12.2	350	8.4	12.0
400	9.0	15.4	300	12.4	17.7	350	12.2	17.4	400	12.4	16.8	400	13.7	18.9	250	9.6	12.6	400	8.7	12.2
450	9.3	15.2	350	12.7	18.0	400	12.6	17.8	450	12.2	16.5	450	13.5	18.6	300	9.6	13.0	450	9.6	14.2
500	8.7	14.7	400	13.1	18.6	450	13.0	18.2	500	12.2	16.6	500	13.1	18.0	350	10.0	13.8	500	9.5	13.6
550	8.7	14.0	450	13.5	19.3	500	13.1	18.3	550	12.4	16.9	550	12.7	17.6	400	10.1	13.9	550	9.2	14.0
600	8.5	13.6	500	13.5	19.3	550	12.8	18.0	600	12.4	17.0	600	12.5	17.1	430	10.4	14.8	600	8.9	14.2
650	8.3	13.3	550	13.1	18.8	600	12.3	18.0	631	12.0	16.4	650	12.4	16.8	450	10.4	14.8	650	8.4	14.0
700	8.1	12.9	600	12.8	18.4	650	12.1	17.6	650	12.3	16.9	700	11.8	16.0	500	10.2	15.0	700	6.9	14.7
750	7.5	12.3	650	12.8	18.0	700	12.1	17.4	700	11.9	16.5	750	11.6	15.8	550	9.8	15.0	750	6.6	14.8
800	7.0	11.9	700	12.5	17.7	750	11.9	16.9	750	11.8	16.2	800	11.4	15.5	600	9.4	14.8	800	6.7	15.4
850	6.7	11.5	750	12.2	17.3	800	11.6	16.6	800	11.5	15.8	850	11.2	15.1	610	9.3	15.0	807	7.0	15.8
900	6.2	10.8	800	12.0	16.8	850	11.3	16.1	850	11.1	15.4	900	10.7	14.5	650	7.7	15.6	850	8.0	15.6
950	5.7	10.4	850	11.7	16.5	900	11.2	15.5	900	10.7	15.1	950	10.4	14.2	700	7.5	15.6	900	8.4	15.4
1000	5.2	10.0	900	11.6	15.9	950	11.1	15.1	950	10.5	14.8	1000	10.0	13.6	750	7.3	15.4	950	8.9	14.9
1030	4.6	10.2	950	11.3	15.5	1000	10.7	14.6	1000	10.1	14.6	1050	10.0	13.4	800	7.2	15.4	1000	9.2	14.6
1050	5.0	9.8	1000	10.9	15.1	1050	10.5	14.3	1050	9.8	14.2	1100	9.7	13.0	850	7.3	15.5	1050	9.0	14.2
1100	5.7	9.1	1050	10.5	14.7	1100	10.2	14.0	1100	9.8	13.7				900	6.9	15.1	1100	8.8	13.8
1125	3.5	8.8	1100	10.3	14.2				1126	9.8	13.6				950	6.9	15.2	1132	8.7	13.5
			1150	10.0	13.8										990	7.6	15.4			
			1200	10.0	13.3										1000	8.5	15.3			
			1250	9.8	12.9										1050	8.8	15.0			
			1274	9.2	12.8										1100	8.8	14.6			
															1150	8.8	14.2			

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #345 5 May 1969 0812 EST Keystone			Ascn #346 5 May 1969 0903 EST Keystone			Ascn #347 5 May 1969 0952 EST Keystone			Ascn #348 5 May 1969 1256 EST Keystone			Ascn #349 6 May 1969 0545 EST Keystone			Ascn #350 6 May 1969 0723 EST Keystone			Ascn #351 6 May 1969 0818 EST Keystone		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	11.9	15.9	Sfc	13.0	18.1	Sfc	13.6	20.0	Sfc	14.0	22.6	Sfc	9.4	10.5	Sfc	9.0	13.2	Sfc	11.1	16.2
50	11.2	15.4	50	12.0	17.2	50	12.6	19.0	50	13.6	21.8	15	8.4	9.6	50	8.6	12.9	50	10.3	15.4
100	11.2	15.4	100	11.6	16.8	100	12.6	19.0	100	13.6	21.6	50	8.2	10.2	100	8.5	12.7	100	9.9	14.8
150	10.7	15.0	150	11.7	16.8	150	12.4	18.8	150	13.2	21.1	100	9.0	12.2	150	8.1	12.4	150	9.9	14.7
200	10.4	14.4	200	11.4	16.2	200	11.6	18.0	200	13.0	20.6	150	9.0	12.0	200	7.8	12.1	200	9.3	14.0
250	10.1	14.2	250	11.1	15.8	250	11.4	17.5	250	12.5	20.0	200	6.6	9.8	225	7.8	12.1	250	9.2	13.8
300	9.8	13.8	300	10.8	15.4	300	11.4	17.2	300	12.3	19.5	250	6.5	10.2	250	9.3	14.0	270	9.2	13.8
350	9.6	13.6	350	10.6	15.0	350	11.2	16.6	350	12.3	19.4	270	10.2	14.8	300	10.4	15.6	300	10.3	15.3
400	9.6	14.2	400	10.2	14.5	400	10.9	16.3	400	11.9	18.9	300	11.0	15.8	320	11.1	16.3	350	11.1	16.4
450	9.4	14.2	450	10.1	14.1	450	10.3	15.5	450	11.6	18.4	350	11.6	16.8	350	11.2	16.4	400	11.0	16.2
500	9.2	14.2	500	9.4	14.0	500	9.8	15.6	500	11.5	18.1	375	11.7	16.9	400	11.2	16.2	450	11.3	16.1
550	8.7	13.9	520	9.4	14.0	550	9.5	15.1	550	10.9	17.3	400	11.7	16.8	450	11.1	15.9	500	11.1	15.8
600	8.3	14.3	530	8.7	14.6	600	8.6	15.4	600	10.8	17.0	450	11.6	16.6	500	11.2	15.8	550	11.2	15.6
650	7.4	14.2	550	8.4	14.6	650	7.9	14.7	650	10.6	16.6	500	11.6	16.4	550	11.3	15.7	600	11.2	15.3
674	6.2	15.0	600	7.5	14.7	700	7.9	14.3	700	10.3	16.2	550	11.3	15.9	600	11.2	15.5	650	11.0	14.9
700	6.7	14.2	650	6.8	14.6	750	7.9	13.4	750	9.9	15.6	600	11.8	16.1	650	10.9	15.1	700	10.8	14.6
724	6.0	15.2	680	6.6	14.4	765	6.8	14.2	800	9.5	15.0	650	12.0	15.9	700	10.8	14.7	750	10.5	14.3
750	5.9	14.9	700	6.2	15.1	800	6.7	14.2	850	9.4	14.6	700	12.0	15.7	750	10.6	14.5	800	10.0	14.3
779	5.9	15.4	715	6.1	15.4	850	7.6	14.4	900	9.1	14.1	750	11.7	15.5	800	10.4	14.4	850	10.0	14.2
800	5.9	15.4	750	8.8	15.4	900	7.6	14.2	950	8.7	13.5	800	11.2	15.0	850	10.0	14.2	900	9.9	14.2
850	7.8	15.0	800	9.0	15.2	950	8.4	13.8	1000	8.5	13.2	850	10.9	14.7	900	9.8	14.0	950	9.8	14.2
900	8.5	14.9	850	8.8	14.8	1000	8.4	13.4	1050	8.3	12.9	900	10.6	14.6	950	9.7	13.6	1000	9.5	13.8
950	8.7	14.5	900	8.6	14.4	1050	8.6	13.1	1100	8.0	12.4	950	10.1	14.2	1000	9.7	13.4	1050	9.4	13.4
1000	8.7	14.1	950	8.4	14.0	1100	8.6	12.8	1129	7.8	12.1	1000	9.8	14.1	1050	9.5	13.4	1100	9.2	13.0
1050	8.6	13.6	1000	8.3	13.6	1125	8.5	12.6				1050	9.5	13.8	1100	9.2	13.1	1125	8.8	13.0
1100	8.4	13.3	1050	8.2	13.2							1100	9.3	13.5	1130	9.1	13.0			
1124	8.3	13.1	1100	8.3	12.7							1110	9.3	13.4						
			1125	8.2	12.5															

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #352 6 May 1969 0854 EST Keystone			Ascn #353 6 May 1969 0930 EST Keystone			Ascn #354 6 May 1969 1005 EST Keystone			Ascn #355 6 May 1969 1256 EST Keystone			Ascn #356 7 May 1969 0550 EST Keystone			Ascn #357 7 May 1969 0711 EST Keystone			Ascn #358 7 May 1969 0911 EST Keystone		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	11.9	17.4	Sfc	14.2	20.8	Sfc	14.4	20.8	Sfc	16.0	24.0	Sfc	14.8	16.3	Sfc	12.9	15.3	Sfc	15.8	21.6
50	11.1	16.7	5	13.2	19.6	50	12.7	19.3	50	15.1	23.1	5	13.5	14.9	50	12.6	15.0	50	15.4	21.0
100	10.7	16.2	50	11.7	18.2	100	12.6	19.1	100	14.7	22.6	50	12.6	14.3	100	12.3	14.9	100	15.2	20.6
150	10.6	16.0	100	11.2	18.0	150	12.1	18.5	150	14.7	22.2	85	12.4	14.2	150	12.3	15.9	150	14.7	19.9
200	11.6	15.9	150	10.8	17.3	200	12.0	18.2	200	14.2	21.7	100	12.8	15.0	164	12.2	15.8	200	14.5	19.4
250	10.6	15.8	200	10.6	16.7	250	12.2	18.2	250	14.3	21.5	115	12.6	15.0	200	12.3	17.1	250	14.2	19.0
300	10.4	15.6	250	10.4	16.3	300	11.6	17.4	300	14.3	21.4	150	13.4	17.6	250	12.9	18.6	300	13.9	18.6
325	11.2	16.6	300	10.4	15.8	350	11.2	16.8	350	13.8	20.6	170	14.4	20.9	274	13.2	19.2	350	13.7	18.5
350	11.4	16.6	350	10.4	15.8	400	10.9	16.4	400	13.0	19.8	200	14.7	21.5	300	13.0	19.0	400	13.5	18.2
400	11.4	16.4	400	10.4	15.6	450	10.6	15.8	450	12.9	19.5	250	14.9	22.0	350	12.9	18.8	450	13.7	18.4
450	11.4	16.2	450	10.5	15.3	500	10.2	15.3	500	12.3	18.7	300	14.8	22.2	400	12.0	18.0	500	14.1	19.0
500	11.3	15.9	500	10.4	15.0	550	10.1	15.1	550	11.9	18.5	350	14.8	22.2	450	12.8	18.9	550	14.5	19.7
550	11.6	16.0	550	10.1	14.8	600	9.9	14.6	600	11.6	18.1	400	14.7	21.9	500	12.8	19.4	564	14.6	20.0
600	10.9	15.4	600	10.0	14.6	650	9.7	14.3	650	11.4	17.6	410	14.6	21.8	550	12.7	19.2	600	14.4	20.0
650	10.8	15.2	650	9.8	14.4	672	9.6	14.2	700	11.3	17.1	450	14.7	22.2	600	12.7	19.1	650	14.1	19.6
700	10.5	15.2				682	10.0	14.8	750	11.1	16.7	500	14.6	22.0	650	13.2	19.2	700	13.7	19.1
750	10.4	15.1				700	9.6	14.2	800	10.9	16.2	550	14.3	21.6	700	13.0	19.0	750	13.7	18.7
800	10.4	15.0				750	9.3	13.6	850	10.7	15.8	600	14.0	21.1	750	12.8	18.9	800	13.7	18.4
						800	9.4	13.8	900	10.3	15.0	650	13.8	20.7	800	12.5	18.5	850	13.5	18.1
						850	9.7	13.9	950	10.0	14.5	700	13.5	20.3	850	12.1	18.2	900	12.9	17.6
						900	9.4	13.4	1000	9.5	14.0	750	13.2	19.9	900	12.0	17.8	950	12.6	17.2
						950	9.2	13.0	1050	9.4	13.8	800	13.0	19.4	950	11.9	17.4	1000	12.3	16.7
						1000	8.8	13.2	1100	9.2	13.4	850	12.7	18.9	1000	11.5	17.0	1050	12.0	16.3
						1050	8.5	12.9	1150	8.9	12.9	900	12.4	18.4	1050	11.3	16.6	1100	11.5	15.8
						1100	8.5	12.6				950	12.1	18.1	1100	11.1	16.2	1134	11.4	15.4
						1122	8.6	12.4				1000	11.8	17.7						
												1050	11.6	17.4						
												1100	11.5	17.1						
												1110	11.4	17.0						

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #359
7 May 1969
1140 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	18.8	26.8
50	18.1	26.2
100	17.7	25.8
150	17.5	25.5
200	17.0	24.6
250	16.4	23.8
300	16.0	23.2
350	15.9	22.9
400	15.6	22.4
450	15.4	22.0
500	15.1	21.5
550	14.8	21.1
600	14.6	20.6
650	14.4	20.2
700	13.9	19.6
750	13.7	19.0
800	13.3	18.5
850	13.3	18.0
900	13.1	17.5
950	12.7	17.0
1000	12.2	16.6
1050	12.3	16.2
1100	12.1	15.6
1117	12.0	15.4

Ascn #360
8 May 1969
0547 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	17.0	17.8
10	16.3	16.8
50	16.0	16.6
100	16.1	18.2
150	16.2	18.8
200	16.4	19.9
230	16.4	20.2
250	16.3	20.3
300	16.2	20.0
325	16.1	20.2
350	16.0	20.0
390	15.8	19.8
400	15.8	20.0
450	15.7	20.3
500	15.6	20.4
550	15.2	20.6
600	15.2	20.6
650	15.1	20.3
700	15.1	20.4
750	15.1	20.2
800	15.0	20.0
850	15.0	19.9
900	14.4	19.2
950	14.2	18.8
1000	13.8	18.4
1050	13.6	18.0
1100	13.2	17.4
1150	13.0	17.1
1170	13.0	17.0

Ascn #361
8 May 1969
0651 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	16.2	18.2
8	15.9	17.3
50	15.6	17.6
100	15.6	18.0
150	15.6	18.8
200	15.5	19.3
250	15.4	19.4
300	15.1	19.5
323	15.0	20.0
350	14.9	20.1
378	14.8	20.2
400	14.7	19.9
450	14.4	20.0
500	14.2	19.5
550	13.9	19.1
600	13.6	18.7
650	13.4	18.4
700	13.2	18.2
750	13.1	18.6
778	13.1	18.9
800	13.1	18.7
850	12.7	18.4
900	12.6	18.2
950	12.6	17.8
1000	12.4	17.2
1050	12.4	16.6
1100	12.1	16.2

Ascn #362
8 May 1969
1158 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	17.4	19.8
50	17.0	19.6
100	16.7	19.2
150	16.3	18.6
200	16.2	18.2
250	15.7	17.6
300	15.5	17.2
350	15.2	16.8
400	15.0	16.3
450	14.8	16.0
500	14.3	15.2
550	14.1	14.9
600	13.8	14.4
650	13.5	14.0
700	13.2	13.6

Ascn #363
9 May 1969
0758 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	15.1	16.4
50	14.5	16.0
100	14.2	15.5
150	13.9	15.1
200	13.6	14.8
250	13.1	14.3
300	13.1	13.9
350	12.7	13.4
400	12.0	12.7
417	12.2	13.0

Ascn #364
9 October 1969
0640 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	5.1	5.1
30	5.1	5.2
50	5.4	5.6
100	7.8	8.5
150	8.8	10.0
200	10.4	14.0
235	11.3	15.5
250	11.3	15.5
300	11.3	15.6
350	10.9	15.2
400	10.8	15.1
450	10.9	15.1
500	10.9	14.8
550	10.6	14.4
600	10.4	14.1
650	10.0	13.6
700	9.8	13.3
750	9.5	13.0
800	9.2	12.6
850	8.9	12.3
900	8.9	12.1
950	8.6	11.6
1000	8.2	11.1
1050	8.0	10.7
1100	7.7	10.3
1105	7.6	10.2

Ascn #365
9 October 1969
0831 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	8.0	8.6
27	7.3	7.8
50	7.5	8.0
100	8.8	9.8
150	7.4	11.3
200	9.6	12.4
250	10.1	14.4
300	10.9	15.5
350	10.8	15.4
400	10.7	15.2
450	10.6	15.0
500	10.4	14.7
550	[illegible]	14.4
600	9.9	13.9
650	9.8	13.6
700	9.4	13.2
750	9.2	12.8
800	8.9	12.5
850	8.7	12.1
900	8.4	11.7
950	8.0	11.2
1000	7.7	10.7
1050	7.4	10.2
1100	7.1	9.8
1127	7.1	9.7

Ascn #366
9 October 1969
0936 EST
Keystone

Z(m)	WB(°C)	T(°C)
Sfc	12.5	14.4
50	11.8	13.8
75	12.1	15.0
100	12.1	15.1
150	12.0	15.2
200	11.9	15.4
235	11.9	16.5
250	11.9	16.6
300	11.7	16.4
350	11.5	16.1
400	11.4	15.8
450	11.1	15.4
500	10.8	15.0
550	10.6	14.6
600	10.3	14.2
650	10.0	13.8
700	9.6	13.4
750	9.3	12.9
800	9.0	12.4
850	8.7	11.9
900	8.3	11.4
950	8.0	11.0
1000	7.7	10.5
1050	7.3	10.1
1100	7.0	9.8
1150	6.5	9.4
1200	6.2	9.2
1235	5.8	9.0

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #367 9 October 1969 1022 EST Keystone			Ascn #368 10 October 1969 0638 EST Keystone			Ascn #369 10 October 1969 0823 EST Keystone			Ascn #370 10 October 1969 0931 EST Keystone			Ascn #371 10 October 1969 1007 EST Keystone			Ascn #372 11 October 1969 0637 EST Homer City			Ascn #373 11 October 1969 0826 EST Homer City		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	15.0	19.2	Sfc	7.4	7.4	Sfc	9.7	10.2	Sfc	15.1	17.5	Sfc	17.4	21.8	Sfc	14.8	16.4	Sfc	16.7	19.5
50	14.4	18.5	23	6.4	6.6	25	9.4	9.8	50	14.8	17.3	50	16.9	21.1	50	15.0	16.8	50	16.3	19.0
100	14.1	18.1	50	8.0	8.2	50	10.0	10.7	100	14.9	18.3	100	16.5	20.6	100	15.1	17.3	100	16.1	18.7
150	13.5	17.5	100	9.8	10.6	100	12.0	14.2	150	14.8	18.2	150	16.1	20.2	150	15.0	17.4	150	15.9	18.4
200	13.2	17.2	150	11.7	14.2	150	12.2	15.1	200	14.6	18.0	200	15.9	19.8	200	15.1	18.0	200	15.6	18.6
250	13.0	16.8	200	12.4	15.7	200	12.4	15.6	250	14.3	17.9	250	15.5	19.2	250	15.1	18.3	220	15.9	19.1
300	12.3	16.9	250	12.9	16.5	250	12.4	16.0	300	14.1	17.6	300	15.2	19.0	300	15.1	18.5	250	15.8	19.0
350	12.0	16.5	300	13.0	16.7	300	12.7	16.4	350	14.1	17.6	350	14.9	18.4	350	15.1	18.6	300	15.7	18.9
400	11.8	15.9	350	13.2	17.0	350	13.1	16.9	400	13.7	17.2	400	14.7	18.1	400	15.0	18.4	350	15.7	18.8
450	11.7	15.3	400	13.2	17.0	400	13.3	17.0	450	14.1	17.7	450	14.5	17.8	450	15.0	18.5	400	15.5	18.5
500	11.0	15.2	450	13.4	17.4	450	13.6	17.4	500	14.2	17.7	500	14.1	17.2	500	14.8	18.4	450	15.2	18.2
550	10.8	14.8	500	13.3	17.8	470	13.9	17.7	550	14.1	17.4	517	14.7	18.2	550	14.9	18.5	500	15.5	18.2
600	10.4	14.3	550	13.4	18.0	500	13.8	17.7	600	14.2	17.6	537	14.1	17.1	600	14.8	18.7	550	15.5	17.9
650	10.0	13.8	600	13.5	17.8	550	13.7	17.5	650	13.9	17.5	550	14.7	18.0	650	14.6	18.4	600	15.8	18.1
700	9.8	13.4	650	13.3	17.5	600	13.7	17.3	700	13.7	17.0	600	14.3	17.5	700	14.4	18.0	650	15.8	18.3
750	9.5	13.0	700	13.3	17.3	650	13.6	17.0	750	13.5	16.8	650	14.4	17.7	750	14.2	17.7	665	15.7	18.7
800	9.0	12.4	750	13.2	17.1	700	13.6	17.0	800	13.3	16.4	700	14.2	17.6	800	13.9	17.2	700	15.4	18.5
850	8.8	12.0	800	12.9	16.6	725	13.4	17.0	850	13.0	16.0	750	13.8	17.0	850	14.1	17.3	750	14.9	18.2
900	8.4	11.5	850	12.7	16.2	750	13.2	16.8	900	12.6	15.4	800	13.5	16.6	900	13.9	16.9	800	14.6	17.8
950	7.9	10.9	900	12.5	15.8	800	13.0	16.5	950	12.3	15.0	850	13.4	16.4	950	13.7	16.5	850	14.3	17.4
1000	7.5	10.5	950	12.1	15.3	850	12.7	16.1	1000	12.1	14.6	900	13.0	16.0	1000	13.6	16.2	900	14.0	17.0
1050	7.3	10.2	1000	11.8	14.8	900	12.4	15.5	1050	11.8	14.2	950	12.8	15.5	1050	13.1	15.6	950	13.6	16.5
1100	7.1	9.9	1050	11.6	14.4	950	12.0	15.0	1100	11.5	13.8	1000	12.4	15.0	1070	13.1	15.5	1000	13.3	16.1
			1093	11.4	14.2	1000	11.8	14.6				1050	12.2	14.6				1050	12.9	15.7
						1050	11.5	14.2				1100	11.8	14.2				1085	12.8	15.6
						1100	11.4	13.9												
						1115	11.3	13.8												

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #374 11 October 1969 0940 EST Homer City			Ascn #375 11 October 1969 1105 EST Homer City			Ascn #376 11 October 1969 1217 EST Homer City			Ascn #377 13 October 1969 0637 EST Homer City			Ascn #378 13 October 1969 0743 EST Homer City			Ascn #379 13 October 1969 0904 EST Homer City			Ascn #380 13 October 1969 0942 EST Homer City		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	18.0	21.8	Sfc	20.1	24.5	Sfc	21.2	26.0	Sfc	20.0	21.8	Sfc	19.6	22.2	Sfc	21.7	26.0	Sfc	21.4	26.0
50	18.1	21.7	50	19.6	23.6	50	20.6	25.0	50	20.2	22.6	50	19.4	22.3	50	20.6	24.6	50	20.9	25.3
100	17.7	21.2	100	19.3	23.1	100	20.4	24.6	100	20.2	22.6	100	19.1	22.1	100	20.0	23.8	100	20.8	25.0
150	17.5	20.8	150	18.9	22.5	150	20.1	24.1	150	20.0	22.4	150	18.9	21.8	150	19.7	23.3	150	20.1	24.3
200	17.2	20.4	200	18.6	22.0	200	19.7	23.5	200	19.7	21.9	200	18.8	21.8	200	19.2	23.0	200	19.8	23.8
250	17.0	20.0	250	18.2	21.4	250	19.5	23.2	250	19.5	21.7	250	18.6	21.6	250	18.8	22.4	250	19.4	23.2
300	16.6	19.6	300	17.9	20.9	300	19.0	22.5	300	19.2	21.5	290	18.3	21.2	300	18.6	22.2	300	19.1	22.8
350	16.3	19.1	350	17.7	20.5	350	18.8	22.1	350	18.9	21.1	300	18.6	21.8	350	18.1	21.8	350	18.8	22.4
400	16.2	18.8	400	17.3	20.0	400	18.4	21.5	400	18.8	21.0	350	18.1	21.0	400	18.0	21.8	400	18.6	22.0
450	15.9	18.4	450	17.0	19.5	450	18.0	21.0	450	18.8	21.6	380	18.0	21.0	418	18.2	22.0	450	18.3	21.6
500	15.7	17.9	500	16.8	19.1	500	17.6	20.4	500	18.8	22.0	400	18.4	21.9	450	18.1	21.8	500	17.9	21.1
550	15.4	17.6	550	16.5	18.7	550	17.3	19.9	518	18.8	22.2	450	18.1	21.6	500	17.9	21.5	550	17.7	20.8
600	16.3	18.6	600	16.1	18.1	600	17.1	19.5	550	18.6	21.9	500	18.0	21.5	550	17.5	21.1	600	17.7	20.7
610	16.8	18.9	650	16.0	18.0	650	16.8	19.0	600	18.4	21.7	550	17.8	21.2	600	17.4	20.8	650	17.9	20.6
650	16.5	18.6	700	15.9	17.8	700	16.6	18.6	650	18.2	21.3	600	17.6	21.0	650	17.2	20.4	700	17.6	20.1
700	16.3	18.6	750	15.7	17.6	750	16.4	18.2	700	17.8	20.8	650	17.5	20.8	700	17.4	20.2	750	17.4	19.6
750	15.8	18.2	800	15.4	17.8	800	16.0	17.6	750	17.6	20.5	700	17.2	20.2	750	17.4	19.8	800	17.2	19.2
800	15.2	18.0	850	15.1	17.3	850	15.7	17.1	800	17.2	20.0	750	16.8	19.8	800	16.9	19.1	850	17.1	18.9
850	14.7	17.5	900	14.9	17.3	900	15.9	17.2	850	16.9	19.5	800	16.6	19.4	850	16.8	18.7	900	16.9	18.5
900	14.3	17.1	950	14.8	16.8	950	15.9	17.1	900	16.8	19.4	850	16.3	19.0	900	16.8	18.4	950	16.6	18.1
950	13.9	16.7	1000	14.4	16.4	1000	15.4	16.6	950	16.6	19.0	900	16.1	18.7	950	16.6	18.1			
1000	13.6	16.4	1050	14.0	15.9	1050	15.2	16.4	1000	16.4	18.8	950	16.0	18.3	1000	16.4	17.8			
1050	13.2	16.0	1090	13.7	15.7	1077	15.1	16.3	1050	16.1	18.4	1000	16.0	18.0	1050	15.9	17.8			
1090	13.0	15.8							1078	16.0	18.3	1050	15.7	17.8	1088	15.7	17.7			
												1090	15.5	17.7						

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #381
13 October 1969
1115 EST
Homer City

Z(m)	WB(°C)	T(°C)
Sfc	22.5	28.3
50	21.9	26.8
100	21.5	26.3
150	21.2	25.8
200	20.9	25.3
250	20.6	24.8
300	20.2	24.2
350	19.9	23.8
400	19.6	23.2
450	19.2	22.7
500	19.0	22.4
550	18.7	21.9
600	18.3	21.3
650	18.0	20.8
700	17.7	20.3
750	17.4	19.8
800	17.0	19.2
850	16.7	18.7
900	16.6	18.4
950	16.5	18.2
1000	16.0	17.5
1050	15.6	17.0
1059	15.9	17.4
1100	15.7	17.1

Ascn #382
15 October 1969
0731 EST
Homer City

Z(m)	WB(°C)	T(°C)
Sfc	3.9	4.3
25	3.5	3.8
50	3.6	4.0
100	4.6	5.4
150	5.3	6.6
170	5.5	7.0
200	5.5	7.0
250	5.6	7.1
300	5.7	7.2
350	5.6	7.0
400	5.6	6.9
450	5.4	6.7
500	5.2	6.4
550	5.1	6.2
600	4.9	5.9
650	4.5	5.5
700	4.2	5.2
750	4.0	4.8
800	3.7	4.4
850	3.6	4.2
900	3.4	4.0
920	3.4	4.0
950	3.6	4.8
975	3.6	8.6
1000	3.8	8.9
1050	5.0	9.8
1065	5.2	10.2
1100	5.3	10.3
1150	5.2	10.0
1200	5.2	9.8
1225	5.2	9.6

Ascn #383
15 October 1969
0937 EST
Homer City

Z(m)	WB(°C)	T(°C)
Sfc	8.2	10.0
50	7.7	9.4
100	7.1	8.7
150	7.2	8.8
200	6.9	8.3
250	6.3	7.6
300	5.8	7.2
340	5.6	6.9

Ascn #384
15 October 1969
1032 EST
Homer City

Z(m)	WB(°C)	T(°C)
Sfc	8.7	11.5
50	8.5	10.8
100	8.2	10.4
150	7.6	9.8
200	7.3	9.3
250	6.9	8.7
300	6.7	8.3
350	6.5	8.0
400	6.2	7.6
450	5.8	7.1
500	5.5	6.7
550	5.2	6.2
600	4.8	5.8
650	4.6	5.4
700	4.4	5.1
750	4.1	4.7
800	3.6	4.1
850	3.2	3.6
860	3.2	4.0
890	3.0	3.6
900	3.1	3.8
950	3.0	7.8
1000	4.0	9.0
1030	4.2	9.4
1050	4.3	9.4
1100	4.3	9.3

Ascn #385
15 October 1969
1221 EST
Homer City

Z(m)	WB(°C)	T(°C)
Sfc	11.0	14.8
50	10.2	13.5
100	9.9	13.1
150	9.6	12.8
200	9.3	12.3
250	8.8	11.6
300	8.6	11.2
350	8.5	10.9
400	8.1	10.4
450	7.6	9.8
500	7.3	9.4
550	6.8	8.9
600	6.8	8.6
650	6.2	8.1
700	5.8	7.4
750	5.4	7.2
800	5.4	7.2
850	4.9	6.0
900	4.8	5.8
950	4.4	8.6
1000	4.3	9.2
1050	4.4	9.4
1100	4.6	9.4

Ascn #386
17 October 1969
1007 EST
Homer City

Z(m)	WB(°C)	T(°C)
Sfc	---	---
50	7.1	9.1
100	6.9	8.8
150	6.6	8.4
200	6.3	7.9
250	5.8	7.4
300	5.5	7.0
350	5.0	6.5
400	4.6	6.0
450	4.4	5.6
500	4.1	5.1
550	3.7	4.7
600	3.4	4.2
650	3.1	3.8
700	2.7	3.3
750	2.3	2.9
800	2.0	2.4
850	1.7	2.0
900	1.2	1.5
950	0.9	1.2
960	0.8	1.1

Ascn #387
17 October 1969
1124 EST
Homer City

Z(m)	WB(°C)	T(°C)
Sfc	6.6	9.2
50	6.1	8.7
100	6.0	8.4
150	5.4	7.8
200	5.0	7.3
250	4.7	6.8
300	4.4	6.4
350	4.0	6.0
400	3.8	5.6
450	3.3	5.1
500	3.1	4.7
550	2.8	4.2
600	2.7	3.8
650	2.6	3.4
700	2.4	3.0
750	1.9	2.4
800	1.6	2.0
850	1.2	1.6
900	1.0	1.2
950	0.6	0.6
1000	---	0.4
1050	---	- 0.4
1090	---	- 0.6

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #388 18 October 1969 0657 EST Homer City			Ascn #389 18 October 1969 0953 EST Homer City			Ascn #390 18 October 1969 1128 EST Homer City			Ascn #391 20 October 1969 0631 EST Homer City			Ascn #392 20 October 1969 0819 EST Homer City			Ascn #393 20 October 1969 1028 EST Homer City			Ascn #394 20 October 1969 1120 EST Homer City		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	2.2	2.5	Sfc	7.0	9.6	Sfc	10.6	14.0	Sfc	14.1	16.9	Sfc	16.6	19.2	Sfc	19.6	23.0	Sfc	18.8	21.8
50	2.4	2.8	50	6.0	8.2	50	8.1	11.1	50	14.4	17.2	50	16.3	18.8	50	18.7	21.5	50	18.9	21.8
100	2.6	3.0	100	5.8	7.8	100	7.9	10.8	100	14.5	17.4	100	16.1	18.5	100	18.1	20.6	100	18.4	21.2
150	2.8	3.2	150	5.4	7.4	150	7.3	10.1	150	14.5	17.5	150	15.9	18.2	150	17.6	20.0	150	18.1	20.7
200	2.9	3.3	200	5.2	7.0	200	7.1	9.9	200	14.7	17.5	200	15.4	17.6	200	17.2	19.4	200	17.9	20.3
250	2.9	3.3	250	5.0	6.8	250	6.5	9.2	250	14.5	17.2	250	15.6	17.4	250	17.0	19.0	250	17.5	19.8
300	3.1	3.6	300	4.5	6.2	300	6.3	8.8	300	14.6	17.2	300	15.3	16.8	300	16.8	18.6	300	17.2	19.2
350	3.3	3.8	350	4.1	5.7	350	6.0	8.4	350	14.4	16.9	350	15.1	16.7	350	16.5	18.1	350	16.8	18.7
400	3.4	3.9	400	4.0	5.6	400	5.6	7.8	400	14.6	17.0	400	14.8	16.2	400	16.1	17.6	400	16.5	18.3
450	3.6	4.2	450	3.6	5.2	450	5.2	7.4	450	14.5	16.7	450	14.5	15.8	450	15.8	17.2	450	16.1	17.7
500	3.6	4.3	500	3.3	4.8	500	4.9	6.9	500	14.8	16.8	500	14.3	15.3	500	15.4	16.6	500	15.8	17.2
550	4.0	4.8	550	3.0	4.5	550	4.6	6.5	550	14.9	16.8	550	14.1	14.9	550	15.1	16.1	550	15.5	16.7
600	3.9	4.	600	2.7	4.2	600	4.1	6.1	600	15.1	16.9	600	14.1	14.7	600	14.9	15.7	600	15.0	16.2
650	3.9	4	650	2.4	3.8	650	3.8	5.7	650	15.2	17.0				650	14.4	15.1	650	14.9	16.0
700	3.8	4.2	700	2.1	3.7	700	3.5	5.2	700	15.0	16.9				700	14.3	14.9	700	14.7	15.5
750	3.5	3.9	725	2.2	3.9	750	3.2	4.8	750	14.7	16.5				725	14.0	14.5	720	14.4	15.2
800	3.1	3.4	750	2.2	3.8	800	2.8	4.2	800	14.2	16.0									
850	2.7	3.0	800	1.8	3.4	850	2.6	3.9	850	14.1	15.6									
900	2.4	2.6	850	1.4	3.0	900	2.4	3.6	900	13.9	15.2									
950	2.0	2.2	900	1.2	2.8	950	1.8	3.3	950	13.8	14.9									
1000	1.6	1.8	950	0.8	2.6	1000	1.4	3.0												
1050	1.4	1.6	1000	0.5	2.4	1050	0.9	2.5												
1100	1.0	1.2	1050	0.2	2.2	1100	0.5	2.1												
1150	0.7	1.1	1100	-0.2	2.2															
1200	0.6	1.0																		
1210	0.5	0.9																		

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #395 21 October 1969 0643 EST Homer City			Ascn #396 21 October 1969 0833 EST Homer City			Ascn #397 21 October 1969 1025 EST Homer City			Ascn #398 21 October 1969 1224 EST Homer City			Ascn #399 23 October 1969 0711 EST Homer City			Ascn #400 24 October 1969 0646 EST Homer City			Ascn #401 24 October 1969 0943 EST Homer City		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	9.7	10.7	Sfc	10.6	11.8	Sfc	---	---	Sfc	11.0	13.8	Sfc	---	- 0.1	Sfc	---	- 3.0	Sfc	2.4	3.2
50	9.7	10.8	50	10.1	11.4	50	10.4	12.8	50	10.1	13.0	50	---	- 0.5	50	---	- 2.4	50	2.3	2.6
100	9.7	10.7	100	9.8	11.0	100	9.9	12.2	100	9.6	12.4	100	---	- 0.4	80	---	- 2.6	100	1.8	2.0
150	9.4	10.4	150	9.6	10.6	150	9.4	11.6	150	9.2	11.9	150	---	- 0.6	100	---	- 1.0	150	1.3	1.5
200	9.1	10.1	200	9.2	10.1	200	9.0	11.1	200	8.8	11.4	200	---	- 0.8	150	---	0.0	200	0.8	1.0
250	8.9	9.8	250	8.8	9.8	250	8.6	10.6	250	8.5	10.9	250	---	- 1.1	175	---	0.3	250	0.6	0.8
300	8.6	9.4	300	8.4	9.2	300	8.4	10.3	300	8.1	10.5	300	---	- 1.4	200	---	0.2	300	0.2	0.4
350	8.3	9.0	350	8.1	8.9	350	7.9	9.7	350	8.0	10.3	350	---	- 1.4	250	---	0.0	350	0.0	0.2
400	8.1	8.7	400	7.8	8.4	400	7.6	9.4	400	7.6	9.8	400	---	- 1.6	300	---	- 0.4	400	---	0.0
450	7.7	8.2	450	7.4	7.9	450	6.9	8.9	450	7.1	9.1	450	---	- 1.8	350	---	- 0.6	450	---	0.3
500	7.5	8.0	500	7.0	7.5	500	6.4	8.4	500	6.6	8.4	500	---	- 2.0	400	---	- 0.9	500	---	0.3
550	7.1	7.5	550	6.7	7.1	550	6.2	8.0	550	6.3	8.1	550	---	- 2.2	450	---	- 1.2	550	---	0.1
600	6.8	7.2	600	6.3	6.6	600	5.8	7.6	600	5.8	7.4	600	---	- 2.6	500	---	- 1.4	600	---	0.0
650	6.4	6.8	625	6.1	6.4	650	5.4	7.1	650	5.5	7.0	650	---	- 3.1	550	---	- 1.3	650	---	- 0.2
700	6.0	6.5				700	5.1	6.5	700	5.2	6.5	700	---	- 3.4	600	---	- 1.6	690	---	- 0.2
750	5.6	6.2				750	4.9	6.1	750	4.9	6.1	750	---	- 3.6	650	---	- 1.8	700	---	0.0
800	5.2	5.9				800	4.3	5.7	800	4.6	5.8	800	---	- 4.0	700	---	- 2.1	710	---	0.5
850	4.8	5.6				850	4.0	5.2	850	4.3	5.3	850	---	- 4.5	750	---	- 2.4	750	---	0.5
900	4.4	5.4				900	3.8	4.8	900	3.8	4.8	900	---	- 5.0	760	---	- 1.4	800	---	0.3
950	4.3	5.1				950	3.5	4.4	950	3.4	4.3	950	---	- 5.4	800	---	- 1.0	850	---	0.1
1000	3.9	4.9				1000	3.3	4.3	1000	3.1	3.9	1000	---	- 5.8	830	---	- 1.0	900	---	0.0
1050	3.7	4.6				1050	2.6	3.4	1050	2.8	3.5	1050	---	- 6.1	850	---	- 0.5	950	0.1	0.4
1070	3.4	4.4				1100	2.3	3.1	1085	2.6	3.2	1074	---	- 6.4	900	---	0.0	1000	0.3	0.6
															915	---	0.4	1050	0.3	0.6
															950	---	0.4	1100	0.3	0.6
															1000	---	0.4	1110	0.5	0.8
															1050	---	0.4			
															1090	---	0.4			

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #402 24 October 1969 1208 EST Homer City			Ascn #403 28 October 1969 0714 EST Keystone			Ascn #404 28 October 1969 0830 EST Keystone			Ascn #405 28 October 1969 1034 EST Keystone			Ascn #406 28 October 1969 1138 EST Keystone			Ascn #407 29 October 1969 0716 EST Keystone			Ascn #408 29 October 1969 0901 EST Keystone		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	3.6	8.0	Sfc	---	1.0	Sfc	---	1.5	Sfc	5.0	6.7	Sfc	5.4	7.8	Sfc	---	---	Sfc	---	0.5
50	2.2	6.4	12	---	0.4	50	---	0.9	50	4.2	5.8	50	5.0	7.0	50	---	---	50	---	0.2
100	1.9	6.1	27	---	0.5	100	---	1.9	100	3.9	5.5	100	4.6	6.6	100	---	- 2.0	100	---	0.0
150	1.8	6.0	50	---	0.6	150	---	1.9	150	3.6	5.0	150	4.5	6.4	150	---	0.0	150	---	0.0
200	1.6	5.6	100	---	1.3	200	---	1.9	200	3.6	4.8	200	4.0	5.8	200	0.5	0.7	200	---	0.0
250	1.2	5.1	150	---	2.8	250	---	1.7	250	3.1	4.2	250	3.7	5.4	250	0.7	0.9	250	---	- 0.1
300	0.9	4.5	200	---	3.1	300	---	2.2	300	2.7	3.8	300	3.3	5.0	300	0.6	0.8	300	---	- 0.4
350	0.6	4.2	250	---	2.9	350	---	2.2	350	2.3	3.5	350	3.0	4.6	350	0.6	1.0	350	---	0.0
400	0.3	3.7	300	---	2.7	400	---	2.1	400	2.0	3.0	400	3.0	4.6	400	1.5	2.5	400	0.9	1.9
450	0.1	3.3	350	---	2.3	450	---	1.8	450	1.5	2.4	450	2.5	4.0	450	1.6	2.6	450	1.7	2.6
500	-0.3	2.9	400	---	2.3	500	---	1.5	500	1.4	2.2	500	2.4	3.8	500	1.7	2.5	500	1.9	2.6
550	-0.6	2.6	450	---	2.5	550	---	1.0	550	0.7	1.8	550	2.0	3.2	550	1.8	2.6	550	1.9	2.5
600	-0.8	2.1	500	---	2.3	600	---	0.8	600	0.4	1.1	600	1.3	2.4	600	1.7	2.5	600	2.0	2.5
650	-1.2	1.6	550	---	2.0	650	---	0.5	650	0.4	0.8	650	1.0	2.0	650	1.6	2.4	650	2.0	2.4
700	-1.6	1.4	600	---	1.8	700	---	0.3	700	-0.1	0.3	700	0.8	1.6	700	1.5	2.2	700	1.8	2.2
740	-1.9	1.3	650	---	1.5	750	---	0.0	750	-0.2	0.1	750	0.2	1.0	750	1.4	2.2	750	1.6	1.9
750	0.8	1.2	700	---	1.1	800	---	- 0.4	800	---	- 0.7	800	-0.3	0.5	800	1.1	1.9	800	1.5	1.8
770	0.8	1.2	750	---	0.6	850	---	- 0.7	822	---	- 0.2	850	---	0.0	850	1.1	1.8	850	1.2	1.5
800	-0.4	1.2	800	---	0.2	900	---	- 1.1	850	---	- 0.2	900	---	- 0.4	900	0.9	1.6	900	1.1	1.4
850	-0.7	1.2	850	---	- 0.3	950	---	- 1.6	900	---	- 0.5	950	---	- 0.8	950	0.8	1.5	950	1.2	1.5
900	-0.8	1.0	900	---	- 0.7	1000	---	- 2.0	950	---	- 1.0	1000	---	- 1.2	1000	0.8	1.5	1000	1.1	1.4
930	-1.0	0.8	950	---	- 1.1	1050	---	- 2.6	1000	---	- 1.7	1050	---	- 1.6	1050	0.8	1.6	1050	1.0	1.3
950	-0.6	1.2	1000	---	- 1.6	1100	---	- 3.0	1050	---	- 2.2	1100	---	- 2.2	1100	0.8	1.6	1080	1.0	1.3
1000	-0.9	0.7	1050	---	- 2.1				1100	---	- 2.5				1150	0.8	1.6			
1030	-1.1	0.4																		
1050	-0.8	0.8																		
1100	-0.8	0.8																		

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #409 29 October 1969 1054 EST Keystone			Ascn #410 29 October 1969 1229 EST Keystone			Ascn #411 30 October 1969 0712 EST Keystone			Ascn #412 30 October 1969 0900 EST Keystone			Ascn #413 31 October 1969 0712 EST Keystone			Ascn #414 31 October 1969 0813 EST Keystone			Ascn #415 31 October 1969 0914 EST Keystone		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	4.1	6.4	Sfc	5.4	9.0	Sfc	---	- 2.0	Sfc	2.3	4.0	Sfc	---	2.4	Sfc	3.8	4.2	Sfc	8.9	11.6
50	3.9	5.8	50	5.0	8.1	8	---	- 2.0	23	1.6	3.0	15	---	2.5	25	2.4	2.6	10	8.6	11.0
100	3.6	5.4	100	4.4	7.4	13	---	- 3.0	38	2.1	3.8	30	---	1.6	50	3.6	5.2	25	8.8	11.4
150	3.1	4.8	150	4.3	7.2	33	---	- 2.9	50	1.8	3.2	50	2.8	4.0	100	6.0	8.4	40	8.5	10.9
200	3.0	4.6	200	3.8	6.6	50	---	- 0.8	100	1.4	2.7	100	5.6	8.0	150	6.4	8.8	50	8.8	11.6
250	2.3	3.9	250	3.9	6.6	100	---	0.0	150	1.4	3.4	150	6.3	8.7	200	6.3	8.7	100	8.7	11.4
300	2.1	3.6	300	3.4	6.0	150	---	2.1	200	2.2	5.0	200	6.4	8.8	250	6.4	8.7	150	8.5	11.1
350	1.5	3.0	350	3.2	5.6	200	3.6	4.2	250	2.7	5.8	250	6.5	9.0	300	6.4	8.7	200	8.2	10.8
400	1.1	2.4	400	2.4	4.9	250	4.4	5.0	300	2.5	5.7	300	6.7	9.3	350	6.7	9.2	250	8.0	10.5
450	0.8	2.0	450	2.2	4.6	300	5.0	5.5	350	2.3	5.5	350	7.2	9.9	400	7.2	9.8	300	7.6	9.9
500	0.4	2.2	500	1.9	4.3	350	5.3	5.8	400	2.1	5.5	400	7.3	10.0	450	7.5	10.0	350	7.2	9.4
550	-0.2	2.0	550	1.4	3.8	400	5.3	5.8	450	2.1	5.4	450	7.5	10.2	500	7.5	10.0	400	7.2	9.4
600	1.2	2.2	600	1.0	3.3	450	5.5	6.0	500	2.0	5.3	500	7.7	10.3	550	7.5	10.0	450	7.4	9.8
650	0.3	2.1	650	0.7	2.7	500	5.3	5.7	550	2.2	5.3	550	7.6	10.1	600	7.5	9.9	480	8.2	10.7
700	0.0	1.8	700	0.3	2.4	550	5.1	5.6	600	2.3	5.4	600	7.5	10.0	650	7.7	10.1	500	8.2	10.6
750	-0.2	1.6	750	-0.3	2.1	600	5.7	6.4	650	2.3	5.4	650	7.4	9.8	700	7.7	10.0	550	8.0	10.4
800	-0.3	1.4	800	-0.5	1.9	650	7.0	7.8	700	2.8	6.8	700	7.4	9.8	750	7.6	9.8	600	8.0	10.3
850	-0.3	1.4	850	-0.8	2.0	700	7.4	8.2	750	2.9	6.9	750	7.2	9.5	800	7.4	9.4	650	7.8	10.0
880	0.1	1.9	900	-1.2	1.6	750	7.5	8.2	800	3.0	6.9	800	7.2	9.4	850	7.1	9.0	700	7.7	9.8
900	0.0	1.8	950	-1.2	1.8	800	7.7	8.3	850	3.2	7.3	850	7.0	9.0	900	6.9	8.6	750	7.4	9.4
950	-0.2	1.5	1000	-1.3	1.8	850	7.8	8.4	900	3.8	8.0	900	6.7	8.6	950	6.6	8.3	800	7.2	9.1
965	-0.3	1.4	1050	-1.4	1.9	900	7.8	8.4	950	4.0	8.2	950	6.5	8.2	1000	6.4	7.9	850	6.9	8.7
1000	-0.1	1.6	1100	-1.2	2.4	950	7.6	8.2	1000	4.2	8.5	1000	6.2	7.8	1050	6.1	7.5	900	6.7	8.3
1050	-0.1	1.6				1000	7.4	8.0	1050	4.1	8.3	1050	5.9	7.3	1100	6.0	7.3	950	6.3	7.9
1100	-0.4	1.2				1050	7.1	7.7	1100	4.0	8.0	1095	5.7	7.1				1000	6.1	7.5
						1083	7.0	7.5										1050	5.8	7.2
																		1100	5.6	7.0
																		1110	5.6	6.9

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn #416 31 October 1969 1039 EST Keystone			Ascn #417 1 November 1969 0752 EST Keystone			Ascn #418 1 November 1969 0853 EST Keystone			Ascn #419 6 November 1969 0719 EST Homer City			Ascn #420 6 November 1969 0901 EST Homer City			Ascn #421 6 November 1969 1023 EST Homer City			Ascn #422 6 November 1969 1146 EST Homer City		
Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)	Z(m)	WB(°C)	T(°C)
Sfc	11.8	15.6	Sfc	13.3	14.1	Sfc	12.8	13.4	Sfc	5.7	7.1	Sfc	4.9	6.4	Sfc	5.9	8.0	Sfc	6.2	8.4
50	10.8	14.2	25	13.6	14.4	25	12.9	13.6	50	5.6	7.0	50	4.5	5.9	50	5.4	7.4	50	5.7	7.8
100	10.8	14.0	50	13.5	14.3	50	12.8	13.5	100	5.4	6.7	100	4.2	5.5	100	5.0	7.0	100	5.4	7.4
150	10.3	13.8	100	13.2	14.2	100	12.7	13.3	150	5.0	6.2	150	3.8	5.0	150	4.6	6.5	150	4.9	6.9
200	10.2	13.4	150	13.1	14.2	150	12.5	13.1	200	4.7	5.8	200	3.4	4.5	200	4.1	5.9	200	4.5	6.4
250	9.9	12.9	200	12.8	13.8	200	12.2	12.9	250	5.4	5.4	250	3.1	4.1	250	3.8	5.5	250	4.2	6.0
300	9.6	12.4	250	12.5	13.5	250	12.0	12.6	300	3.8	4.7	300	2.9	3.8	300	3.4	5.0	300	4.0	5.6
350	9.1	11.8	300	12.3	13.2	300	11.7	12.3	350	3.5	4.3	350	2.3	3.2	350	3.1	4.6	350	3.4	5.0
400	8.8	11.3	350	12.2	13.2	350	11.4	11.9	400	3.1	3.7	400	2.0	2.7	400	2.8	4.1	400	3.1	4.5
450	8.4	10.8	400	11.7	12.5	400	11.2	11.8	450	2.8	3.4	450	1.5	2.2	450	2.4	3.6	450	2.8	4.0
500	8.0	10.4	450	11.3	12.0	450	10.9	11.4	500	2.4	2.9	500	1.3	1.8	500	2.0	3.1	500	2.2	3.4
525	8.0	10.4	500	11.2	11.8	500	10.6	11.0	550	1.9	2.3	550	0.7	1.3	550	1.5	2.5	550	1.9	2.9
535	8.4	11.0	550	10.8	11.4	550	10.4	10.8	600	1.4	1.7	600	0.3	0.7	600	1.1	2.0	600	1.4	2.4
550	8.5	10.9	600	10.6	11.0	600	10.0	10.4	650	1.2	1.4	650	-0.1	0.3	650	0.7	1.5	650	1.1	1.9
600	7.9	10.1	650	10.2	10.6	650	9.7	10.0				700	-0.2	0.2	700	0.3	1.0	700	0.7	1.5
650	8.0	10.2	700	10.0	10.3							750	---	- 0.7	750	-0.1	0.6	750	0.3	0.9
700	7.6	9.6	750	9.6	9.8							762	---	- 0.8	800	-0.4	0.2	800	-0.2	0.4
750	6.6	8.4	800	9.4	9.6										850	---	- 0.2	850	---	0.0
775	7.2	9.2													900	---	- 0.6	900	---	- 0.4
800	7.1	9.0													950	---	- 1.2	950	---	- 1.0
850	7.0	8.9													1000	---	- 1.0	1000	---	- 1.4
875	6.8	8.8													1050	---	- 0.7	1050	---	- 1.8
885	6.8	9.0													1080	---	- 0.9	1080	---	- 2.2
900	6.8	9.0																		
950	6.5	8.6																		
1000	6.3	8.3																		
1050	5.9	7.9																		
1100	5.8	7.6																		
1115	5.7	7.5																		

PILOT-BALLOON MEASUREMENTS

Pilot-balloon measurements of winds aloft were made at the Keystone or Homer City Station during nearly all experiments. Depending on prevailing meteorological conditions and the length of flights, as few as one and as many as eleven ascensions per series day were made, usually at 30-minute intervals. Most of the pilot balloons were tracked by the double-theodolite technique; when fog prevented visibility between sites, single-theodolite releases were made. Similarly, when one theodolite lost the balloon prematurely, the computer calculated the remaining portion of the run as a single using the previously determined ascension rate.

Table 9 lists the winds aloft in increments of 50 meters above stack base elevation. The wind speed and direction for each height were obtained from the original data by interpolating between the 30-second readings.

Pilot balloon runs A-5 and A-6 on April 10, 1969, were released from Jimmy Stewart Airport instead of the Keystone Station. Therefore, wind speeds and directions are listed for 50-meter increments above the airport surface (release elevation 427 meters MSL) and not above stack base elevation.

Table 9. PILOT BALLOON MEASUREMENTS

Symbols

Ascn # : Letter designates release point, i.e., K = Keystone; H = Homer City; A = Jimmy Stewart Airport. Ascensions consecutively numbered beginning with #1 each day.

EST : Release time of pilot balloon.

Single : Balloon tracked by one theodolite; standard ascension rate.

Double : Balloon tracked by two theodolites; calculated ascension rate.

Combined : Ascension started as double but terminated as single; calculated ascension rate for double portion used for single portion.

Z (m) : Height above stack base elevation in whole meters.

D (°) : Wind direction to nearest tenth degree of azimuth.

S (mps) : Wind speed to nearest tenth meter per second.

Sfc : Surface wind direction and speed determined by hand-held anemometer.

--- : Missing data.

Table 9. PILOT BALLOON MEASUREMENTS

	Ascn #K-1 20 Oct 67 0705 EST Single		Ascn #K-2 20 Oct 67 0738 EST Double		Ascn #K-3 20 Oct 67 0801 EST Double		Ascn #K-4 20 Oct 67 0830 EST Combined		Ascn #K-5 20 Oct 67 0900 EST Combined		Ascn #K-6 20 Oct 67 0930 EST Single		Ascn #K-1 21 Oct 67 0708 EST Double		Ascn #K-2 21 Oct 67 0730 EST Single		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc	----	---		0.0		0.0	----	---		0.0	----	---	----	---	----	---	Sfc
50	----	---	181.9	0.9	207.0	1.1	180.7	1.7	187.6	1.3	264.6	4.7	223.8	2.4	242.4	3.3	50
100	181.4	3.0	183.9	2.0	208.8	2.3	189.2	3.2	188.7	2.3	265.7	6.7	232.7	4.1	244.5	5.8	100
150	181.4	9.6	208.0	4.1	218.3	3.5	197.7	4.6	192.0	2.3	268.9	5.8	242.9	5.5	247.6	7.3	150
200	200.9	8.0	220.8	5.4	227.0	5.8	205.8	6.4	196.7	4.3	265.2	3.7	247.6	7.2	253.0	8.4	200
250	221.3	8.1	234.9	7.0	234.2	8.7	211.2	8.3	207.7	5.8	274.3	2.4	249.2	8.8	258.6	9.8	250
300	233.1	9.6	240.8	9.1	238.5	10.2	240.5	6.1	224.1	7.4	306.9	2.2	248.6	10.0	263.8	11.5	300
350	248.4	10.5	237.1	10.9	240.3	10.6	240.3	9.5	235.5	9.4	270.8	3.3	251.4	12.1	266.1	14.3	350
400	252.8	12.2	237.9	11.9	237.8	11.5	237.1	10.8	235.5	10.5	265.5	4.9	253.8	14.4	269.0	15.8	400
450	251.3	13.6	238.6	11.5	240.3	10.9	238.5	10.6	244.6	9.0	268.2	6.2	261.6	12.8	271.9	16.4	450
500	248.5	13.4	239.9	8.8	244.7	9.9	243.0	10.1	237.8	10.5	272.1	5.9			271.7	17.2	500
550	247.4	13.1	242.6	9.8	246.6	9.8	243.1	10.6	236.5	11.4	276.6	7.2			272.4	15.9	550
600	248.3	12.7			243.8	11.3	244.7	10.7	238.5	11.9	279.9	8.7			272.8	15.1	600
650	250.8	12.1					244.8	11.4	241.8	10.1	282.2	10.8			272.7	15.0	650
700	252.5	11.7					244.2	12.0	242.0	10.4	282.5	16.3			272.7	13.8	700
750	255.0	11.2					245.9	11.6	243.1	10.7	287.4	15.0			271.6	13.9	750
800	256.3	11.0					252.7	14.0	248.0	10.1	288.4	18.5			269.9	14.2	800
850	259.0	11.2					256.8	12.5	251.6	11.7	285.7	24.6			269.5	15.0	850
900	267.8	12.1					261.6	11.9	254.9	11.9	281.7	25.8			272.6	16.9	900
950	253.8	10.9					263.8	12.7	258.4	11.4	283.3	23.8					950
1000	253.7	11.0					261.7	13.6	261.2	11.3	283.8	16.9					1000
1050							262.3	12.9	260.7	11.5							1050
1100							262.4	12.0	255.9	12.3							1100
1150							255.3	10.6	255.3	11.6							1150
1200							251.8	10.2	256.4	11.0							1200
1250							261.4	12.0	255.7	12.1							1250
1300							258.6	13.5	259.1	12.6							1300

Table 9 (continued). PILOT-BALLOON MEASUREMENTS

	Ascn #K-3 21 Oct 67 0800 EST Combined		Ascn #K-4 21 Oct 67 0833 EST Single		Ascn #K-5 21 Oct 67 0901 EST Combined		Ascn #K-6 21 Oct 67 0930 EST Double		Ascn #K-1 22 Oct 67 0707 EST Double		Ascn #K-2 22 Oct 67 0730 EST Double		Ascn #K-3 22 Oct 67 0800 EST Double		Ascn #K-4 22 Oct 67 0830 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc	----	---	----	---	----	---	----	---	----	---		0.0		0.0		0.0	Sfc
50	243.2	2.7	253.7	1.8	244.3	4.8	245.0	4.1	341.4	5.1	055.4	0.4	061.6	1.0	119.5	0.1	50
100	245.8	4.5	252.9	4.4	249.0	7.5	247.0	7.4	153.0	2.1	058.0	0.7	075.6	1.5		0.0	100
150	250.1	5.1	252.2	7.6	251.6	7.9	256.9	7.5	166.4	4.1	070.4	0.4	103.0	0.4	308.6	0.1	150
200	254.7	5.4	252.8	11.0	249.5	7.7	258.9	8.9	279.9	2.3	267.9	1.3	249.0	1.1	261.9	0.2	200
250	259.0	6.2	252.9	13.2	251.0	6.6	250.3	7.0	275.9	1.6	274.4	1.4	258.4	1.3	275.9	0.8	250
300	262.0	8.0	252.7	14.2	287.7	4.1	254.9	7.5	337.3	1.2	310.6	1.2	262.3	0.1	310.6	0.9	300
350	263.8	9.8	252.5	13.2	260.4	6.3	256.9	6.9	351.4	2.0	350.8	1.8	064.3	0.3	330.7	0.8	350
400	264.6	11.4	257.1	13.5	272.8	7.6	268.9	6.2	348.7	2.4	356.1	2.5	020.0	1.7	005.2	1.4	400
450	266.0	12.5	263.4	14.4	290.1	4.6	277.8	6.3	348.0	2.7	001.1	2.3	011.6	2.3	007.4	2.3	450
500	268.2	13.1	267.8	13.7	334.2	2.6	276.1	6.7	349.3	2.8	352.2	2.3	000.8	1.8	354.9	2.0	500
550	272.9	12.7	269.0	14.6	292.3	5.9	272.7	6.6	346.5	2.7	345.5	2.5	352.7	2.0	349.4	2.2	550
600	275.7	13.8	271.5	14.2	278.6	9.3	274.9	6.8	340.7	2.8	339.7	2.6	352.5	2.3	348.8	2.6	600
650	277.4	15.3	276.7	12.9	276.7	9.5	269.2	11.3	336.6	2.9	337.6	2.8	349.2	2.5	347.6	2.8	650
700	276.3	16.3	277.4	15.6			266.7	15.9	337.5	3.2	339.4	3.1	349.9	2.4	348.5	3.1	700
750	274.6	17.0	279.7	14.0			276.0	10.2	338.6	3.6	341.1	3.4	351.2	2.4	349.6	3.0	750
800	274.2	16.7	279.7	14.4			272.9	12.3	340.5	3.8	341.0	3.6	344.8	2.6	348.5	3.0	800
850	273.7	17.1	277.8	16.2			272.0	12.2	342.4	3.6	341.8	3.5	343.3	2.6	349.0	3.0	850
900	273.1	18.3	276.3	16.8			271.3	14.7	343.0	3.9			329.6	2.4	342.9	2.9	900
950	272.0	19.1	274.1	17.5			271.9	13.3	339.5	4.0			309.5	2.7	320.1	2.7	950
1000	270.8	19.8	272.2	18.3			270.1	15.5	313.7	3.4			304.0	3.7			1000
1050	269.5	20.3	274.3	19.3			269.7	13.8									1050
1100	268.5	20.7	278.0	20.1			268.6	16.0									1100
1150	267.9	21.0	259.3	19.0			267.0	18.1									1150
1200	268.1	22.0	263.4	19.2													1200
1250	268.2	23.0	266.8	19.8													1250
1300	266.9	23.0	266.4	20.6													1300
1350	262.5	23.6	265.2	21.3													1350
1400	255.6	25.2															1400
1450	264.6	22.9															1450
1500	275.3	21.5															1500

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #K-5 22 Oct 67 0902 EST Double		Ascn #K-6 22 Oct 67 0931 EST Double		Ascn #K-1 23 Oct 67 0635 EST Double		Ascn #K-2 23 Oct 67 0700 EST Combined		Ascn #K-3 23 Oct 67 0730 EST Double		Ascn #K-4 23 Oct 67 0800 EST Double		Ascn #K-5 23 Oct 67 0830 EST Double		Ascn #K-6 23 Oct 67 0901 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	Sfc
50	132.0	0.1		0.0	011.3	0.3	094.2	0.6	046.2	0.3	072.7	0.3	089.5	0.2	067.2	0.3	50
100	150.9	0.6	174.9	0.5	062.7	0.7	091.3	1.2	074.1	1.1	061.2	0.8	078.6	1.0	083.6	1.0	100
150	174.5	1.0	182.3	1.1	104.9	2.0	106.4	1.7	110.1	1.9	106.8	2.0	110.6	2.0	113.2	1.9	150
200	227.8	1.2	210.8	1.0	139.0	3.7	148.5	3.5	150.0	3.5	139.6	3.7	142.4	3.7	152.3	3.9	200
250	268.0	1.5	247.8	1.4	166.2	3.7	165.2	6.4	171.8	5.2	166.9	5.1	168.5	5.2	178.5	5.3	250
300	274.8	0.6	233.4	1.4	183.1	5.4	178.1	6.1	185.0	5.9	179.7	6.1	183.7	6.2	192.4	5.7	300
350	346.3	0.7	230.2	0.2	193.9	6.5	194.2	6.5	197.6	6.6	204.7	6.1	202.3	5.8	208.3	5.7	350
400	011.0	1.0	037.4	0.7	207.6	6.5	212.1	6.8	210.9	7.2	225.2	6.5	219.6	5.9	226.5	6.5	400
450	016.8	1.1	037.8	1.2	215.9	7.3	229.4	7.0	227.9	7.5	232.3	6.9	227.5	6.4	226.9	7.5	450
500	002.9	1.1	038.2	1.2	223.2	8.3	221.7	9.1	225.8	8.0	231.6	6.6	223.8	7.6	227.5	7.5	500
550	349.3	1.7	036.3	1.0			228.1	7.9	226.1	6.9	228.5	6.5	217.1	9.6	228.1	6.9	550
600	345.9	1.6					228.1	7.5	220.8	7.7	227.3	7.4	216.3	10.0	225.2	7.0	600
650	344.4	1.9					227.1	7.0	216.0	9.1	232.4	7.0	234.2	6.1	220.0	8.3	650
700	345.2	2.2					229.1	6.1			228.3	7.3	227.5	5.2	224.4	6.7	700
750	343.5	2.4					230.5	6.1			227.1	6.6	219.2	7.8	219.1	8.0	750
800	339.2	2.3					237.1	6.3			225.6	7.4	217.5	7.9	217.1	7.5	800
850	337.4	2.3					232.0	8.8			228.4	6.6	216.8	7.8	214.2	7.5	850
900	336.9	2.4					243.5	6.8			231.1	5.8	217.2	7.4	211.9	7.2	900
950	333.3	2.3					250.0	4.8			231.7	4.9	218.6	6.2	212.0	5.2	950
1000	310.7	2.4					238.7	5.6			224.2	4.7	219.9	4.4	214.2	4.4	1000
1050	301.0	3.7					230.4	6.7			216.1	6.3	215.5	4.5	212.7	7.3	1050
1100	304.3	5.3					219.4	4.9			209.8	6.6	209.4	6.3	213.4	6.2	1100
1150							210.0	5.5			205.0	6.0	207.7	8.8	211.1	8.4	1150
1200							202.3	4.1			206.5	6.7			210.1	9.7	1200
1250							214.2	5.8							209.7	9.7	1250
1300							214.3	5.3									1300
1350							211.8	4.0									1350
1400							210.0	3.3									1400
1450							204.7	3.2									1450
1500							212.3	2.5									1500

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #K-7 23 Oct 67 0930 EST Double		Ascn #K-8 23 Oct 67 1000 EST Double		Ascn #K-1 24 Oct 67 0630 EST Single		Ascn #K-2 24 Oct 67 0704 EST Single		Ascn #K-3 24 Oct 67 0730 EST Single		Ascn #K-4 24 Oct 67 0801 EST Single		Ascn #K-5 24 Oct 67 0830 EST Single		Ascn #K-6 24 Oct 67 0900 EST Single		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	Sfc
50		0.0	116.7	0.3		0.0	076.8	0.1	095.1	0.4	034.8	0.2	079.3	1.1	077.3	0.9	50
100	081.5	1.1	098.0	1.0	094.7	1.1	086.7	1.1	081.8	1.1	079.8	0.9	095.0	2.3	090.2	2.2	100
150	109.1	1.9	114.2	1.9	094.7	3.5	087.9	3.2	073.2	2.1	090.4	2.5	109.7	3.9	099.0	4.3	150
200	151.4	2.9	150.1	3.2	110.9	4.4	107.0	3.2	111.0	4.1	113.2	3.6	116.8	4.6	124.3	4.4	200
250	176.4	5.3	170.5	4.6	129.4	5.7	138.8	3.9	132.3	5.4	137.1	5.0	134.5	5.2	146.1	5.3	250
300	191.0	5.3	184.4	4.3	145.6	7.6	162.0	6.2	156.4	6.4	157.5	7.2	157.0	6.7	160.0	6.8	300
350	210.7	5.0	202.8	4.2	160.1	7.2	175.0	7.0	172.8	7.0	167.8	7.4	170.5	7.7	172.2	7.6	350
400	220.9	6.1	215.9	5.2	170.5	7.6	196.2	8.6	184.7	8.0	179.0	7.9	182.3	8.6	182.1	8.4	400
450	225.8	7.0	220.7	6.6	178.0	8.4	206.8	10.4	192.9	8.9	189.8	8.9	192.5	9.6	189.9	9.1	450
500	229.6	7.3	224.5	7.5	189.3	9.2	178.1	8.4	198.7	9.1	200.4	10.0	199.6	10.5	194.8	9.4	500
550	230.7	7.4	225.4	8.3	197.5	9.7	194.4	9.3	204.9	9.8	203.7	10.3	208.5	8.9	200.1	9.3	550
600	227.2	7.3	226.1	7.9	203.7	10.3	208.1	10.3	210.6	10.6	208.9	10.7	196.6	6.5	206.1	9.8	600
650	224.2	6.7	226.8	5.7	208.5	11.2	214.9	10.3	216.0	11.1	216.4	11.5			212.6	11.0	650
700	221.3	7.6	221.0	6.6	213.8	12.1	225.8	11.3	223.4	11.3	223.4	11.2			225.6	11.6	700
750	218.1	7.9	218.5	7.0	219.2	12.5	233.8	12.1	232.8	11.1	229.6	11.3			232.2	10.4	750
800	216.1	8.1	216.9	7.2	224.7	12.0	239.7	10.9	239.1	10.8	236.4	11.3			237.8	9.3	800
850	213.6	7.9	214.4	8.2	233.7	11.0	245.9	8.3	242.7	10.3	243.6	11.0					850
900	210.3	7.1	212.0	8.5	249.5	11.2	251.2	6.3	247.6	9.0	250.7	10.0					900
950			210.1	8.1	247.3	9.4	251.3	6.4	250.4	6.2	252.3	8.8					950
1000			207.4	7.1	240.3	8.3	228.0	5.0	240.6	4.8	253.9	6.3					1000
1050			206.5	5.7	233.2	6.9	201.0	4.6	226.5	4.4	250.6	4.5					1050
1100			215.5	5.8	226.5	4.7	196.2	4.2	216.6	4.2	237.1	4.1					1100
1150			219.6	8.0	209.8	4.3	184.9	4.4	199.8	4.6	222.3	4.2					1150
1200			221.1	9.0	193.6	3.9	188.8	5.3	188.5	5.3	208.9	4.5					1200
1250			220.4	8.2	188.5	4.5	193.3	5.9	186.7	5.8	193.1	4.6					1250
1300			215.6	7.0	192.0	5.6	197.4	6.3	190.9	6.2	180.8	5.1					1300
1350			210.5	7.5	195.2	6.0	202.5	6.7	195.7	7.0	184.4	6.4					1350
1400			208.4	7.9			207.7	7.3			191.0	6.6					1400
1450			196.6	7.8			213.9	7.7			197.8	6.9					1450
1500											203.7	7.0					1500

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #K-7 24 Oct 67 0930 EST Single		Ascn #K-8 24 Oct 67 1000 EST Single		Ascn #K-1 26 Oct 67 0700 EST Double		Ascn #K-2 26 Oct 67 0730 EST Combined		Ascn #K-3 26 Oct 67 0800 EST Combined		Ascn #K-4 26 Oct 67 0830 EST Combined		Ascn #K-5 26 Oct 67 0900 EST Single		Ascn #K-6 26 Oct 67 0930 EST Combined		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc	----	---		0.0	----	---	----	---	----	---	----	---	----	---	----	---	Sfc
50	137.7	1.6	143.0	0.7	251.2	2.3	264.2	3.2	247.1	3.3	238.8	2.4	187.0	5.1	242.4	2.3	50
100	139.8	2.8	156.5	1.1	251.1	4.6	260.2	4.4	251.2	5.2	240.0	4.0	197.3	8.7	242.4	4.6	100
150	143.3	3.2	182.0	1.3	247.4	5.3	253.6	4.1	254.8	6.1	241.8	4.9	212.9	11.2	238.4	5.8	150
200	164.7	3.0	189.1	2.4	245.8	6.1	259.2	6.4	256.4	6.6	240.4	5.5	223.0	12.5	234.2	6.7	200
250	184.5	3.4	197.8	3.4	249.0	7.2	259.9	9.2	255.6	7.6	240.2	6.2	231.0	13.5	233.8	7.8	250
300	197.2	4.1	208.3	4.6	247.2	8.5	259.8	12.2	252.1	8.0	244.1	7.3	238.0	14.0	239.8	8.9	300
350	210.5	5.6	244.8	6.6	244.5	9.8	259.7	15.2	247.3	9.2	247.9	7.8	240.4	13.0	249.6	9.5	350
400	221.1	6.9	241.0	6.9	242.4	10.3	256.7	12.9	244.2	10.3	250.9	8.0	241.3	11.9	256.0	10.5	400
450	230.4	8.0	225.4	6.6	247.5	11.0	252.5	10.8	246.0	8.5	249.2	8.6	241.5	11.1	256.5	10.8	450
500	238.6	8.6	240.6	7.8	249.0	5.1	250.3	11.1	252.0	7.9	248.4	9.3	243.3	11.4	256.8	11.0	500
550	245.2	9.0	251.0	8.9	246.9	9.2	250.1	11.1	245.2	12.9	249.5	10.3	242.1	11.9	254.9	11.4	550
600	249.2	9.7	257.7	9.9	247.2	13.6	251.1	11.0	244.4	13.7	251.2	11.4	244.3	11.9	253.4	11.9	600
650	251.7	10.5	262.3	10.6	247.5	17.9	252.1	11.3	247.3	10.6	253.8	11.1	250.5	11.2	252.6	12.5	650
700	258.1	11.4	269.8	10.5	248.0	20.6	253.1	11.6	248.2	11.0	254.2	11.6	255.6	7.6	253.3	12.6	700
750	266.3	12.0	271.9	9.9	250.6	15.1	252.4	12.3	246.5	12.5	253.3	12.9	262.0	7.5	254.7	12.5	750
800	275.0	12.8	273.8	8.9	252.1	14.3	253.2	12.8	248.1	12.5	252.5	15.3	258.4	10.6	255.5	13.3	800
850	281.4	12.5			252.3	15.5	254.9	13.1	248.8	14.4	251.9	17.7	254.9	14.6	256.1	14.5	850
900	282.8	9.1			252.7	15.0	252.6	13.7	253.1	14.2	257.7	7.4	256.9	15.4	258.4	16.2	900
950	282.3	8.0					251.0	13.9	258.4	13.3	260.9	11.2	256.7	16.1	260.9	18.4	950
1000	283.6	6.4					249.9	13.7			257.5	13.9			260.0	18.9	1000
1050	280.3	4.8					248.8	14.1			254.7	15.6			259.3	19.8	1050
1100	263.7	3.7									268.7	15.2			258.9	21.2	1100
1150	243.9	3.2									268.7	15.8			239.9	22.2	1150
1200											262.8	16.7			238.4	22.4	1200
1250											263.6	17.6			281.4	23.7	1250
1300															280.7	23.9	1300
1350															265.9	22.4	1350
1400															259.3	21.6	1400
1450															253.4	20.8	1450
1500															248.0	20.0	1500

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #K-1 27 Oct 67 0703 EST Double		Ascn #K-2 27 Oct 67 0733 EST Double		Ascn #K-3 27 Oct 67 0800 EST Double		Ascn #K-4 27 Oct 67 0832 EST Double		Ascn #K-5 27 Oct 67 0900 EST Double		Ascn #K-6 27 Oct 67 0930 EST Single		Ascn #K-7 27 Oct 67 1000 EST Double		Ascn #K-1 28 Oct 67 0644 EST Single		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0	----	---	----	---	----	---		0.0		0.0	----	---	----	---	Sfc
50	086.4	0.8	091.7	3.8	102.5	4.3	122.9	2.1	139.8	1.2	154.8	4.1	124.8	3.1	----	---	50
100	095.8	2.6	103.0	5.5	108.1	6.1	125.1	3.8	139.8	2.5	151.4	7.0	138.2	5.3	203.6	1.1	100
150	101.1	4.9	113.7	6.2	115.5	6.5	137.3	3.7	139.8	3.8	146.3	8.7	142.4	5.5	203.6	3.5	150
200	113.7	5.9	121.7	6.4	122.0	6.7	147.4	3.8	139.8	5.1	161.9	12.2	145.3	5.2	230.5	3.6	200
250	125.2	6.8	127.1	6.6	128.0	7.0	146.9	4.5	146.4	6.6	166.3	14.0	154.9	6.0	248.0	4.5	250
300	138.9	7.6	130.6	6.8	132.4	7.2	146.8	5.4	152.8	8.3	164.8	13.3	148.1	7.0	254.3	5.8	300
350	145.3	9.2	139.7	8.9	136.5	7.3	148.5	8.7	157.1	10.0	163.4	11.6	154.2	9.0	259.1	6.9	350
400	152.5	10.2	146.2	10.8	143.3	9.8	152.2	11.7	160.1	11.8	162.3	11.2	157.0	9.5	260.5	8.1	400
450	155.1	10.3	151.3	12.4	148.3	15.5	156.8	14.6	161.6	14.1	162.4	12.0	162.8	11.0	261.4	9.1	450
500	156.0	10.7	151.9	15.5	159.3	12.2	160.1	18.1	162.0	17.1	164.6	13.7			265.6	9.9	500
550	156.5	11.4	154.9	16.9	160.1	18.1	169.4	16.1	165.7	17.2	170.0	14.4			268.5	10.7	550
600	159.2	11.9	166.3	12.6	171.3	17.2	172.3	18.7	174.2	16.7	174.0	15.8			269.7	10.9	600
650	161.2	14.1	160.5	18.7	177.5	17.3			175.5	21.6	176.3	18.0					650
700	161.6	16.5	158.6	23.4	179.4	17.1			176.4	26.3	182.2	19.1					700
750	168.6	13.2	159.9	24.4					192.3	21.4							750
800	169.2	15.8	161.9	24.0													800
850	169.0	18.4	166.7	20.8													850
900	169.9	19.4	170.7	20.0													900
950	176.0	15.4															950

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #K-2 28 Oct 67 0700 EST Combined		Ascn #K-3 28 Oct 67 0733 EST Double		Ascn #K-4 28 Oct 67 0800 EST Double		Ascn #K-5 28 Oct 67 0832 EST Single		Ascn #K-6 28 Oct 67 0900 EST Double		Ascn #K-1 29 Oct 67 0748 EST Single		Ascn #K-2 29 Oct 67 0832 EST Single		Ascn #K-3 29 Oct 67 0913 EST Combined		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0	----	---		0.0	----	---		0.0		0.0	----	---		0.0	Sfc
50	198.2	1.2	221.0	2.0	216.9	1.2	----	---	352.4	1.1		0.0	216.2	1.9	085.3	0.5	50
100	203.6	1.9	225.9	3.3	212.2	2.3	201.6	1.6	230.5	3.3	074.0	1.5	273.5	2.2	077.3	0.9	100
150	217.9	2.3	242.3	3.1	216.1	3.3	201.6	5.0	222.6	7.3	074.0	4.9	329.7	6.5	064.8	1.4	150
200	247.2	3.0	238.5	4.7	227.1	4.5	219.2	5.9	223.1	8.6	118.2	4.4	337.1	5.6	107.7	3.4	200
250	253.2	4.6	240.7	5.8	235.1	5.3	229.1	6.9	230.4	6.3	130.2	3.7	339.3	5.2	121.6	4.2	250
300	258.6	5.5	243.5	6.7	238.9	5.7	233.9	7.7	238.8	6.0	074.6	1.8	334.7	5.7	126.6	4.6	300
350	262.1	6.7	247.4	7.1	242.3	6.2	252.4	6.6	243.1	7.1	129.6	6.7	330.7	5.6	128.3	4.9	350
400	262.4	8.8	251.1	8.1	245.5	6.8	255.6	7.4	245.8	6.9	127.1	7.0	333.1	5.5	128.0	4.9	400
450	259.7	7.5	252.9	9.0	247.6	6.7	250.4	8.8	246.6	7.3	109.2	4.6	335.0	5.1	125.1	4.6	450
500	263.0	8.6	252.6	9.6	246.7	7.4	251.2	8.9			100.4	4.5	310.6	4.1	124.2	4.5	500
550	267.3	9.1	254.8	9.4	249.7	7.4	253.8	8.9			097.9	4.4	319.2	5.0	125.4	4.5	550
600	272.5	9.2	258.2	9.2	255.4	7.3	257.9	8.8			100.4	4.2	326.3	5.2	126.3	5.2	600
650	276.4	10.1	266.4	8.9	259.5	7.9	263.4	8.6			107.7	3.9	329.1	4.3	125.8	5.3	650
700	281.5	10.4	271.3	9.8	261.8	8.9	269.6	8.5			116.8	3.6	332.4	4.0	126.4	4.9	700
750	284.1	9.9	269.1	11.2			278.0	8.2			124.1	2.9	336.0	3.6	128.7	4.3	750
800	283.6	10.0									131.8	2.3	335.8	3.2	127.3	3.8	800
850	281.8	10.5									140.0	1.6	331.9	2.5	127.8	2.8	850
900	281.3	10.1									170.1	0.5	322.0	0.8	140.1	1.7	900
950	286.5	9.7									272.4	1.1	099.4	0.8	187.3	1.3	950
1000											270.2	2.4	116.6	1.5	196.7	1.0	1000
1050											267.8	3.2	129.0	2.0	206.9	1.0	1050
1100											269.8	3.3	135.6	2.5	195.2	1.3	1100
1150											273.2	3.5	110.6	2.5	169.4	2.3	1150
1200											266.5	3.5	129.2	2.0	243.8	1.6	1200
1250											261.5	3.4	127.4	2.0	245.1	1.8	1250
1300											260.8	3.3	147.7	1.6	214.4	2.0	1300
1350											264.5	3.2	227.2	5.3	215.3	2.9	1350
1400											272.5	2.5					1400
1450											272.1	2.6					1450
1500											267.6	3.0					1500

Table 9 (continued). PILOT BALLOON MEASUREMENTS

Z(m)	Ascn #K-4 29 Oct 67 0933 EST Double		Ascn #K-5 29 Oct 67 1000 EST Double		Ascn #K-6 29 Oct 67 1030 EST Double		Ascn #K-1 30 Oct 67 0700 EST Single		Ascn #K-2 30 Oct 67 0730 EST Single		Ascn #K-3 30 Oct 67 0800 EST Single		Ascn #K-4 30 Oct 67 0830 EST Single		Ascn #K-5 30 Oct 67 0900 EST Single		Z(m)
	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	
Sfc		0.0		0.0		0.0		0.0	----	---	----	---	----	---	----	---	Sfc
50	168.1	0.2	073.5	1.4	083.9	0.9	359.4	1.4	----	---	----	---	----	---	----	---	50
100	168.1	0.5	092.6	1.9	083.9	1.8	355.5	2.7	053.4	2.2	036.8	1.1	025.2	2.6	054.3	1.7	100
150	168.1	0.8	120.1	2.2	082.7	2.3	350.5	3.8	053.4	7.0	036.8	3.4	025.2	8.2	054.3	5.5	150
200	074.4	3.4	132.9	2.8	079.6	2.1	053.5	3.9	054.0	5.6	053.3	3.4	039.2	8.7	049.5	5.3	200
250	098.8	2.9	141.2	3.3	079.5	2.0	089.2	5.3	067.3	5.2	075.9	4.5	061.3	10.6	052.0	4.4	250
300	133.4	3.4	145.4	3.6	099.4	2.0	118.3	6.2	085.3	6.9	089.8	7.0	080.2	15.0	069.9	3.2	300
350	135.1	3.2	147.8	3.6	116.8	2.3	118.5	3.3	088.6	8.9	103.6	5.0	091.7	15.1	099.6	3.5	350
400	130.4	3.6	147.7	3.2	129.6	1.9	129.5	2.0	101.1	5.6	112.8	4.1	101.0	13.4	113.0	3.9	400
450	123.5	4.4	147.1	2.9	131.9	1.7	149.9	1.8	119.7	2.5	115.1	3.6	109.6	10.6	116.3	4.1	450
500	129.8	4.0	145.0	2.8	110.4	1.4	165.0	2.0	125.8	3.1	125.2	2.9	108.0	8.5	110.7	3.9	500
550	138.2	3.7	139.4	2.8	114.6	1.6	168.9	1.9	129.8	2.9	130.9	3.0	119.8	7.9	117.0	3.6	550
600	140.7	3.9	138.4	3.3	158.5	1.0	174.7	1.9	146.7	2.5	138.8	2.9	128.6	7.9	128.0	3.3	600
650	140.4	3.5	140.1	3.3	199.7	1.5	183.9	2.2	167.7	2.5			133.6	7.3	141.4	3.0	650
700	140.5	2.3	143.7	3.1	190.5	2.0	197.2	2.6	184.9	2.6			158.5	6.4	156.8	2.5	700
750	143.2	3.7	149.0	2.9	185.2	2.6	196.5	3.3	185.2	3.1			172.3	6.5	160.2	3.1	750
800	156.7	2.5	155.4	2.8	181.8	3.1	192.4	3.5	182.3	3.2			171.8	7.6	161.6	3.5	800
850	192.5	1.6			179.5	3.7	187.0	3.1	179.2	2.8			167.0	9.0	162.4	3.6	850
900	206.1	1.7			188.6	2.9	183.6	2.8	177.2	1.8			167.8	8.9	159.7	3.6	900
950					205.3	2.2	182.5	2.7	171.3	3.5			165.1	9.1	160.1	3.5	950
1000					200.1	2.4	188.0	2.5	174.9	3.2			167.5	9.2	163.6	3.8	1000
1050					199.7	2.5	192.2	2.3	174.2	2.5			173.2	10.3	165.3	4.2	1050
1100					199.7	2.7	189.9	2.1	160.3	2.3			177.1	12.5			1100
1150					199.6	2.6	190.2	1.7	165.8	1.9			172.1	10.6			1150
1200					204.2	2.3	196.3	1.1	187.9	2.4			172.6	9.7			1200
1250					208.7	2.4			199.3	3.5			175.8	4.5			1250
1300									203.8	4.2			181.0	5.1			1300
1350									208.2	3.9			189.6	5.6			1350
1400													196.8	6.7			1400
1450													201.0	7.4			1450

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #K-6 30 Oct 67 0930 EST Single		Ascn #K-7 30 Oct 67 1000 EST Single		Ascn #K-1 31 Oct 67 0700 EST Single		Ascn #K-2 31 Oct 67 0730 EST Single		Ascn #K-3 31 Oct 67 0800 EST Single		Ascn #K-4 31 Oct 67 0830 EST Single		Ascn #K-5 31 Oct 67 0900 EST Single		Ascn #K-6 31 Oct 67 0930 EST Single		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc	----	---	----	---		0.0	----	---	----	---	----	---		0.0	----	---	Sfc
50	----	---	----	---	358.4	0.5	----	---	----	---	----	---	107.5	0.7	----	---	50
100	059.9	2.4	063.7	1.7	033.1	1.5	035.4	0.9	063.7	1.8	062.6	1.8	124.0	1.8	056.4	1.2	100
150	059.9	7.6	063.7	5.5	049.4	3.6	035.4	2.9	063.7	5.8	062.6	5.9	135.9	3.4	056.4	3.9	150
200	060.2	5.8	063.1	5.0	072.0	4.9	039.9	1.8	079.7	4.9	074.9	5.1	163.5	4.3	075.9	3.8	200
250	067.0	4.4	068.4	3.9	089.7	5.7	063.5	0.6	102.6	4.7	095.1	4.8	183.6	4.9	097.7	5.7	250
300	084.2	3.7	089.4	2.6	109.5	6.2		0.0	122.0	5.5	116.0	5.6	204.1	5.3	107.7	9.3	300
350	102.6	3.1	111.2	2.1	121.7	6.5	125.8	4.6	130.6	6.3	124.1	5.9	222.9	6.7	122.8	7.3	350
400	102.1	2.3	124.8	2.1	128.4	7.4	129.7	7.0	134.2	6.9	130.1	6.9	232.2	7.8	138.8	7.4	400
450	093.9	1.8	123.8	2.3	131.3	8.6	135.8	8.1	137.2	7.2	135.9	8.0	238.8	8.3	148.4	8.5	450
500	130.8	3.4	106.2	2.9	133.4	9.8	146.7	8.6	149.5	6.1	149.8	8.2	248.1	8.2	154.8	9.1	500
550	117.1	3.1	109.1	2.9	140.1	9.9	152.2	8.4	164.5	6.3	166.6	8.0	259.3	9.4	163.0	9.5	550
600	108.4	2.9	120.0	2.9	150.7	9.5	160.0	8.4	175.6	6.4	179.0	7.4	261.7	8.9	170.7	9.5	600
650	118.2	2.8	132.7	3.1	163.5	9.1	169.3	9.0	184.9	5.9	186.3	6.2	255.3	6.4	177.1	9.0	650
700	136.5	1.6	144.2	2.2	163.0	9.5	173.6	9.4	193.8	5.4	187.0	5.6	258.3	6.5	177.8	8.4	700
750	160.6	1.9	164.1	1.8	171.7	9.7	180.0	9.4	194.4	7.6	194.7	5.4	270.3	6.8	181.4	8.9	750
800	167.1	2.1	178.1	1.7	174.5	10.0	182.2	8.7	212.4	7.0	198.9	5.9	276.4	6.8	185.7	9.1	800
850	163.5	2.1	175.3	1.9	172.4	9.9	182.2	7.7	233.7	6.5	196.8	6.9	276.8	6.8	187.1	9.3	850
900	152.8	2.2	160.4	2.8	171.4	9.6	186.0	7.4	202.0	9.0	189.8	8.1	275.5	8.0	180.9	10.6	900
950	144.9	2.8	143.1	2.9	165.8	9.6	194.8	9.1	199.7	10.1	190.3	8.6	276.8	8.9	171.7	10.2	950
1000	147.5	3.3	138.1	3.1	162.5	10.5	201.2	9.9	194.6	11.5	188.4	9.4	273.6	9.7	175.0	11.3	1000
1050	151.8	3.7	136.2	3.4	163.6	11.0	203.6	10.5	191.0	12.5	185.2	10.6	270.5	10.9	175.4	11.9	1050
1100	154.8	3.9	133.0	3.7	168.8	10.6	201.3	11.5	190.2	12.4	182.2	11.9	269.3	12.2	166.3	11.2	1100
1150	157.7	3.7	133.7	3.6	168.9	11.7	197.8	11.9	192.3	11.9	181.2	11.7	266.1	12.3	163.3	10.8	1150
1200	175.1	4.0	139.1	3.7					191.5	11.7	180.3	10.7	261.7	11.3	161.6	11.0	1200
1250	186.2	4.2	143.9	3.8					191.1	11.7	180.5	10.1	257.9	11.9	162.2	11.9	1250
1300	189.0	4.0	148.8	3.9					189.6	12.1	180.5	10.4	256.4	12.8	165.3	12.9	1300
1350	181.3	4.1	156.0	3.9					183.9	13.5	178.0	11.7	256.3	11.1	171.2	13.0	1350
1400	232.2	4.6	173.3	3.3					185.1	12.6			258.6	10.8			1400
1450	227.7	4.1	191.8	2.8					188.5	10.9			260.4	10.5			1450

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #K-7 31 Oct 67 1003 EST Single		Ascn #K-8 31 Oct 67 1033 EST Single		Ascn #K-1 8 Apr 69 0734 EST Double		Ascn #K-2 8 Apr 69 0800 EST Double		Ascn #K-3 8 Apr 69 0830 EST Double		Ascn #K-4 8 Apr 69 0900 EST Double		Ascn #K-5 8 Apr 69 0930 EST Double		Ascn #K-1 9 Apr 69 0702 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc	----	---	----	---		0.0		0.0		0.0	100.0	1.3	270.0	1.3		0.0	Sfc
50	----	---	----	---	081.4	0.4	094.2	0.3	153.7	0.1	122.4	1.0	235.7	0.5	073.3	1.2	50
100	065.8	1.5	079.9	0.8	059.7	0.6	080.4	0.7	132.2	0.3	124.5	1.2	198.4	1.3	081.6	2.8	100
150	065.8	4.9	079.9	2.7	098.0	0.2	081.2	0.9	141.4	0.6	146.9	0.9	191.8	2.5	091.5	4.4	150
200	076.7	4.8	088.6	3.7	177.5	2.5	170.5	1.7	190.7	1.7	198.6	2.5	208.1	3.1	107.2	6.3	200
250	090.4	4.5	100.0	3.9	181.8	2.4	200.4	2.5	215.1	3.4	223.2	3.0	232.2	3.0	134.5	8.3	250
300	109.2	4.0	120.3	3.7	195.3	2.8	199.4	3.1	224.2	3.7	230.7	3.8	237.8	3.3	150.7	10.3	300
350	111.2	2.1	133.5	4.6	199.0	3.3	190.3	3.3	227.6	3.9	232.7	4.1	243.1	3.4	158.8	10.7	350
400	099.6	0.4	144.2	5.9	192.1	3.4	191.2	3.3	227.9	4.3	243.0	3.7	250.1	3.4	156.2	10.9	400
450	150.4	0.6	152.8	7.2	221.8	2.9	219.7	3.1	232.0	3.9	261.1	4.6	255.6	3.7	154.4	11.8	450
500	154.2	7.6	161.3	8.0	252.6	3.5	246.4	3.3	252.1	3.9	261.2	5.9	266.4	4.9	157.0	14.2	500
550	156.7	8.8	170.9	8.5	269.5	4.3			261.2	4.6	263.4	6.7	269.6	5.6	159.4	15.5	550
600	163.4	8.8	178.5	9.2	272.2	5.1			264.4	5.5	265.8	7.0	271.6	6.5	161.9	16.2	600
650	173.0	8.8	182.5	9.9	269.6	5.9			265.4	6.5	268.8	6.9	274.6	6.7	164.8	15.7	650
700	176.7	8.2	180.8	10.2	268.9	6.7			266.6	7.3	273.2	7.5	276.5	7.2	167.8	14.7	700
750	182.3	9.0	180.2	10.3					270.1	7.2	272.2	8.4	281.0	7.6	171.3	13.2	750
800	181.0	10.2	178.1	10.5					273.8	7.8	277.5	9.1	285.8	8.1	175.3	10.2	800
850	177.1	11.1	174.7	10.6					276.9	8.7	279.2	10.6	289.3	8.7	178.4	8.7	850
900	176.2	10.8	171.1	10.3							280.8	11.5	293.2	9.4	178.9	8.6	900
950	173.8	10.8	165.4	9.7									306.1	9.7	180.2	7.8	950
1000	170.7	10.1	161.5	9.4									295.3	13.3	183.5	6.5	1000
1050	164.8	9.7	162.7	9.5									297.6	14.0	180.9	8.1	1050
1100	157.1	9.8	169.2	10.0											181.1	8.2	1100
1150	154.4	9.4	176.6	9.5											183.0	7.3	1150
1200	158.4	9.7	183.0	10.5											180.1	9.5	1200
1250	164.3	10.3	185.9	11.7											182.2	8.7	1250
1300			187.4	12.6											185.7	7.4	1300
1350			189.9	13.2											188.5	6.4	1350
1400			188.4	13.3											192.5	5.3	1400

Table 9 (continued). PILOT-BALLOON MEASUREMENTS

	Ascn #K-2 9 Apr 69 0730 EST Double		Ascn #K-3 9 Apr 69 0800 EST Double		Ascn #K-4 9 Apr 69 0830 EST Double		Ascn #K-5 9 Apr 69 0900 EST Double		Ascn #K-6 9 Apr 69 0930 EST Double		Ascn #K-7 9 Apr 69 1000 EST Double		Ascn #K-8 9 Apr 69 1030 EST Double		Ascn #K-9 9 Apr 69 1100 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0		0.0	120.0	2.2	180.0	3.1	190.0	2.6	Sfc
50	064.3	0.9	057.4	0.9	057.1	0.5	083.2	1.3	208.0	0.8	142.1	3.3	198.5	3.8	180.2	3.6	50
100	077.1	2.2	070.3	2.1	083.0	1.7	115.9	3.2	176.4	2.0	151.5	3.2	206.3	4.6	163.4	4.7	100
150	098.5	3.8	090.8	3.3	097.5	3.2	129.4	5.8	162.2	3.1	156.5	2.6	201.6	5.7	165.6	5.6	150
200	121.4	6.3	123.4	5.8	123.3	5.1	136.2	6.5	156.5	3.9	164.1	2.1	200.6	6.1	168.8	6.0	200
250	133.8	8.3	134.5	7.2	134.7	6.5	139.1	6.6	159.7	4.4	164.1	3.0	201.6	6.1	172.5	6.1	250
300	143.2	9.5	143.3	8.2	141.6	7.6	142.3	6.4	154.3	4.3	163.1	4.3	197.5	5.2	175.6	6.4	300
350	152.0	9.4	151.2	8.9	147.0	8.4	146.0	6.3	152.7	4.3	174.4	5.0	191.1	4.7	177.9	6.7	350
400	154.4	9.8	155.2	9.7	153.4	9.3	149.3	6.8	158.3	4.5	179.2	4.6	185.8	4.8	180.0	6.8	400
450	158.3	10.9	160.6	11.5	160.0	10.3	159.6	7.9	164.6	4.9	176.7	4.6	185.9	5.2	182.0	6.9	450
500	163.7	12.2	166.3	12.1	168.7	10.9	169.9	9.1	165.9	5.7	179.0	6.0	179.5	5.5	184.9	7.6	500
550	169.4	12.4	172.4	7.0	176.8	10.8	178.6	9.8	164.5	6.6	189.9	6.0	172.1	4.7	189.3	8.1	550
600	175.3	11.0	176.8	10.2	183.5	9.4	187.2	9.3	162.1	7.4	195.8	5.9	170.6	5.5	197.0	7.6	600
650	179.5	9.9	179.3	14.2	187.5	8.6	190.6	9.5	165.0	7.3	196.4	6.5	172.3	5.9	190.0	7.5	650
700	182.4	9.3	181.9	11.9	189.4	9.0	193.3	9.2	176.2	9.1	198.1	6.9	177.2	6.2	187.9	7.0	700
750	184.7	8.1	186.9	8.0	192.2	8.4	195.4	9.0	185.1	10.4	200.1	7.2	179.9	6.6	190.1	7.2	750
800	186.6	7.2	188.7	8.2	190.9	8.3	197.5	8.8	191.5	8.9	202.6	7.4	189.6	7.0	192.1	7.7	800
850	185.1	8.4	190.3	7.7	190.3	6.9	201.3	7.9	192.5	8.4	198.3	8.7	191.2	7.4	191.5	8.0	850
900	182.5	11.3	190.5	7.9	185.0	6.4	202.6	7.4	194.1	6.8	197.9	8.3	193.9	8.3	191.1	7.9	900
950	181.5	13.7	194.9	6.6	184.4	6.7	201.2	7.5	195.8	7.0	198.3	7.6	195.4	8.1	190.8	7.6	950
1000	181.7	15.5	198.7	5.8	192.9	5.7	203.2	7.1	198.0	6.1	198.5	7.0	196.7	9.7	194.0	8.0	1000
1050	181.8	17.2	198.8	6.0	194.1	6.9	201.1	7.2	201.7	5.9	198.2	6.2	197.5	11.7	197.3	8.5	1050
1100	183.1	14.9	204.9	5.8			198.2	7.6	202.7	6.0	197.7	5.8	197.6	12.0	202.4	8.9	1100
1150	188.5	8.4	204.5	6.0			198.3	7.3	203.2	6.2	197.3	6.0	195.8	8.4	208.0	9.4	1150
1200	193.0	6.6	204.2	6.2			200.9	6.1	206.4	5.9			196.1	8.0	211.0	9.6	1200
1250	191.8	7.7					201.1	6.5					197.1	8.7	213.4	9.9	1250
1300	193.2	7.4											198.0	10.6	213.5	10.8	1300
1350	204.6	4.4											198.6	12.4	214.3	10.8	1350
1400	198.2	5.5													218.1	8.8	1400
1450															218.6	8.5	1450

Table 9 (continued). PILOT-BALLOON MEASUREMENTS

	Ascn #K-10 9 Apr 69 1130 EST Double		Ascn #K-1 10 Apr 69 0810 EST Double		Ascn #K-2 10 Apr 69 0830 EST Double		Ascn #K-3 10 Apr 69 0900 EST Double		Ascn #K-4 10 Apr 69 0930 EST Double		Ascn #A-5 10 Apr 69 1340 EST Double		Ascn #A-6 10 Apr 69 1410 EST Double		Ascn #K-1 11 Apr 69 0710 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc	170.0	2.2	220.0	3.1	220.0	1.3	210.0	3.1	240.0	2.6	230.0	6.7	240.0	7.1		0.0	Sfc
50	182.3	3.7	257.5	6.0	215.0	3.8	213.2	4.0	231.5	5.2	208.1	8.5	208.7	7.6	325.2	0.8	50
100	191.8	5.1	240.3	6.5	213.8	5.6	215.5	7.2	223.0	7.8	200.6	9.7	193.4	7.2	334.1	1.8	100
150	187.3	5.7	196.5	10.5	214.3	6.9	209.8	9.9	221.8	9.7	235.2	11.4	229.7	6.3	340.1	3.2	150
200	184.7	6.2	211.7	9.3	214.8	7.5	215.4	11.3	221.4	11.5	243.1	10.9	259.6	7.8	334.0	4.7	200
250	183.7	6.7	225.4	10.3	216.3	8.3	216.9	13.3	222.5	14.3	249.0	10.2	255.2	8.2	327.7	5.4	250
300	184.8	6.9	231.5	11.8	218.6	9.7	215.5	13.7	224.1	18.2	253.6	11.6	251.5	8.7	322.4	5.8	300
350	187.4	7.0	228.9	11.6	216.3	11.4	215.0	12.3	217.9	14.4	245.2	13.1	261.7	10.0	318.9	5.9	350
400	191.7	6.9	227.3	13.5	219.5	13.2	217.9	13.3	221.7	18.5	243.9	12.2	276.4	11.4	317.4	5.8	400
450	198.0	6.7	227.0	14.8	222.1	14.5	219.3	18.5	223.3	20.2			274.8	11.9	317.5	5.5	450
500	200.5	6.6	226.9	15.0	223.7	15.4	217.8	14.8	217.9	11.0			273.7	12.8	318.2	5.5	500
550	201.3	6.5	224.5	15.5	223.6	16.8			222.7	14.0					318.0	5.7	550
600	203.6	6.7	224.3	13.9	223.9	17.7			225.9	17.0					316.5	6.0	600
650	207.0	7.1	225.9	14.4	224.6	17.8			226.8	17.8					315.5	6.1	650
700	207.8	7.5	227.1	16.6	224.7	18.4			227.2	18.2					314.8	6.0	700
750	204.9	7.8			224.0	19.8			226.8	18.7					317.2	6.2	750
800	207.1	7.6			223.7	21.1			228.1	21.0					319.6	6.4	800
850	208.5	7.3			224.1	21.9			227.2	20.4					320.8	6.2	850
900	209.1	7.6			224.4	18.9			229.0	18.6					319.6	5.9	900
950	209.2	8.4			224.4	20.6			231.6	17.7					314.8	5.7	950
1000	212.9	7.9			226.4	21.6			231.6	19.7					309.1	5.8	1000
1050	218.7	7.1							229.8	18.7					299.6	6.0	1050
1100	218.3	6.9															1100
1150	217.6	6.8															1150

Table 9 (continued) PILOT BALLOON MEASUREMENTS

	Ascn #K-2 11 Apr 69 0730 EST Double		Ascn #K-3 11 Apr 69 0800 EST Double		Ascn #K-4 11 Apr 69 0830 EST Double		Ascn #K-5 11 Apr 69 0900 EST Double		Ascn #K-6 11 Apr 69 0930 EST Double		Ascn #K-7 11 Apr 69 1030 EST Double		Ascn #K-8 11 Apr 69 1100 EST Double		Ascn #K-9 11 Apr 69 1130 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc	330.0	2.2		0.0	340.0	3.1	330.0	2.2	330.0	2.2	290.0	2.2	290.0	2.2	290.0	4.4	Sfc
50	333.7	2.0	325.7	2.1	325.7	4.0	323.2	2.4	320.5	3.0	300.4	4.1	321.6	3.1	337.6	3.7	50
100	329.4	2.9	326.3	4.1	314.5	4.8	317.8	2.5	313.0	4.0	302.4	5.5	338.4	3.7	332.4	5.3	100
150	319.0	3.1	330.3	4.8	314.3	5.4	315.1	2.5	311.0	5.5	304.7	4.9	336.3	4.1	337.4	4.9	150
200	310.3	3.2	339.1	5.0	315.6	5.5	300.5	3.7	313.9	5.2	305.5	5.0	326.1	4.1	343.2	4.5	200
250	311.4	3.5	335.6	5.4	320.1	5.5	293.2	5.2	315.4	4.9	305.4	5.3	313.8	4.1	343.4	4.7	250
300	323.8	4.1	334.0	5.7	321.4	5.5	299.0	4.6	314.2	5.0	306.3	5.5	320.5	4.0	343.1	4.8	300
350	330.6	4.3	326.4	6.3	320.4	5.3	308.0	4.0	323.3	4.8	326.8	3.8	319.0	2.2	342.7	4.8	350
400	333.3	4.0	326.8	5.7			309.3	4.6	333.2	4.0	319.3	5.2	319.0	4.5	339.7	4.7	400
450	333.4	4.4	327.5	6.1			310.3	5.3	339.0	3.1	318.0	5.9	308.8	5.1	335.8	4.6	450
500	332.9	5.0	329.5	6.4			310.3	5.5	354.9	2.5	325.7	5.2	303.5	3.6	331.7	4.5	500
550	333.4	4.8	333.7	5.8			309.6	5.3	335.7	2.6	328.1	5.3	310.5	3.3	327.4	4.4	550
600	330.7	4.6	330.5	4.5			314.2	4.4	310.3	2.3	329.9	5.7	318.4	3.8	323.0	4.4	600
650	325.2	4.8	322.4	6.3			321.1	3.6	341.6	2.6	331.5	6.2	304.5	2.1	319.7	4.3	650
700	323.7	5.9	320.1	5.1			318.7	3.8	333.0	2.8	329.3	5.2	295.5	4.8	319.3	4.1	700
750	322.5	5.5	321.3	4.1			315.7	4.1	331.2	3.9	323.2	3.8	294.6	6.2	318.8	3.8	750
800	322.2	6.5	318.8	4.5			324.0	3.4	335.3	3.5	317.2	3.6	299.1	4.7	318.3	3.6	800
850	320.0	6.6	317.3	5.0			330.2	3.0	327.5	3.9	310.7	3.4	301.5	4.4	317.8	3.4	850
900	318.1	6.3	316.1	5.0			333.6	2.8					305.3	4.2	316.8	3.1	900
950	317.8	6.6					324.3	3.0					306.0	4.0	312.9	2.5	950
1000													308.2	4.8	314.7	2.9	1000
1050													306.1	4.6	319.5	4.2	1050
1100													301.4	4.7	312.3	5.6	1100
1150													325.2	4.6	308.8	6.5	1150
1200															342.0	4.7	1200
1250															342.1	6.3	1250
1300															343.4	7.9	1300
1350															343.4	10.1	1350
1400															346.9	5.4	1400
1450															338.1	7.2	1450

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #K-1 12 Apr 69 0900 EST Double		Ascn #K-2 12 Apr 69 0930 EST Double		Ascn #K-3 12 Apr 69 1000 EST Double		Ascn #K-4 12 Apr 69 1030 EST Double		Ascn #K-5 12 Apr 69 1100 EST Double		Ascn #K-6 12 Apr 69 1130 EST Double		Ascn #K-1 14 Apr 69 0730 EST Double		Ascn #K-2 14 Apr 69 0800 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0	080.0	1.3	100.0	1.7		0.0		0.0		0.0		0.0		0.0	Sfc
50	082.6	3.3	088.2	3.1	106.5	2.2	112.1	2.4	121.8	1.6	090.8	0.9	079.7	0.5	050.5	0.8	50
100	091.1	4.8	095.3	4.7	113.1	2.6	106.1	3.3	121.8	3.2	090.8	1.8	069.3	1.5	082.3	1.8	100
150	095.0	4.8	091.1	4.6	124.6	3.8	093.8	3.7	091.1	3.1	093.5	2.4	100.5	2.5	107.6	2.5	150
200	082.6	3.9	086.9	4.6	119.5	3.2	086.9	2.8	067.7	3.2	095.3	2.9	129.5	3.3	129.0	3.3	200
250	071.7	3.6	084.1	4.6	107.8	2.8	089.1	3.4	056.1	2.6	087.7	3.4	154.4	3.7	150.0	3.5	250
300	075.6	4.5	085.0	4.5	093.3	2.7	092.0	2.8	053.5	3.1	091.8	3.5	174.6	4.0	169.4	3.7	300
350	074.6	4.7	086.0	4.4	090.7	2.4	100.5	2.5	061.9	3.2	108.0	3.5	188.8	4.8	189.1	4.0	350
400	069.5	4.3	087.0	4.4	099.6	2.0	083.8	2.0	067.7	2.9	108.2	3.2	204.9	4.6	201.2	3.7	400
450	067.9	4.4	088.0	4.3	104.0	1.8	088.4	2.4	078.4	3.4	108.4	2.8	220.6	4.4	215.4	3.3	450
500	066.6	4.6	087.7	4.7	098.7	1.6	115.4	2.0	084.2	3.4	109.6	2.7	234.3	4.3	228.1	3.1	500
550	059.0	4.7	086.4	5.3	097.0	1.8	148.1	1.9	088.6	3.2	110.1	2.7	239.8	4.4	229.3	3.7	550
600	067.5	5.4	083.4	4.7	095.6	2.5	094.1	1.4	088.4	3.1	108.6	2.9	231.0	4.3	230.0	4.9	600
650	073.5	5.8	077.7	3.6	098.5	2.7	070.6	2.5	082.0	3.0	101.4	3.0	227.8	4.7	234.8	6.1	650
700	077.0	5.7	092.8	3.6	089.7	2.5	074.3	3.5	075.2	2.9	095.0	3.3	233.8	5.7	234.6	6.2	700
750	081.9	5.5	108.5	4.1	080.2	2.6	078.8	3.8	074.6	3.2	093.8	4.0	235.2	6.2	233.3	5.5	750
800	084.1	5.2	100.7	3.7	079.9	2.9			074.2	3.4	081.5	3.6	235.5	5.6	231.0	4.5	800
850	084.0	4.8	092.3	3.9	068.6	2.5			074.6	3.1	076.6	3.9	236.2	4.5	221.0	4.1	850
900	074.8	4.0			055.1	2.3			075.2	2.7	083.0	5.0	235.9	4.4	222.0	3.9	900
950	054.8	3.5			068.6	2.6			080.8	3.1	063.2	4.4	238.2	2.7	221.3	2.9	950
1000	041.2	3.7			062.4	3.5			085.1	3.6	052.8	2.7			211.3	2.4	1000
1050	036.4	4.0			054.7	4.1			080.5	4.4	052.2	2.4			197.3	2.4	1050
1100	031.6	4.4			056.3	4.3			078.8	5.0	079.8	3.3			187.4	2.7	1100
1150	027.2	4.7			062.7	4.7			086.2	5.1	088.1	4.8			185.0	3.2	1150
1200	032.3	4.7			060.8	4.7			092.2	4.8	090.1	5.4			176.4	3.0	1200
1250	036.0	4.0			060.9	4.6			098.1	4.3	090.0	5.3					1250
1300	033.9	2.7			064.9	4.4			098.8	3.8	096.1	3.8					1300
1350	044.4	3.1			066.7	4.4			093.9	3.6							1350
1400	040.8	2.9							085.7	3.2							1400

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #K-3 14 Apr 69 0830 EST Double		Ascn #K-4 14 Apr 69 0900 EST Double		Ascn #K-5 14 Apr 69 0930 EST Double		Ascn #K-6 14 Apr 69 1000 EST Double		Ascn #K-7 14 Apr 69 1030 EST Single		Ascn #K-8 14 Apr 69 1100 EST Double		Ascn #K-9 14 Apr 69 1130 EST Double		Ascn #K-1 15 Apr 69 0730 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	Sfc
50	085.7	0.7	091.0	1.0	077.4	1.8	107.4	0.9	034.8	0.8	144.0	0.1	192.6	0.3	109.8	1.2	50
100	076.7	1.6	096.2	2.0	086.3	1.7	111.2	1.3	073.4	2.5	129.9	0.8	192.1	0.6	114.3	2.2	100
150	080.7	2.3	100.3	2.5	121.5	1.4	115.1	1.3	087.6	5.3	121.0	1.6	186.0	0.6	120.2	2.8	150
200	114.9	2.8	106.6	2.0	144.4	2.4	108.0	1.2	093.3	3.5	108.4	2.0	179.5	0.6	132.7	3.6	200
250	139.6	2.7	131.6	1.8	152.6	3.1	118.4	1.1	105.1	1.9	101.1	1.9	172.0	0.5	143.8	4.8	250
300	165.0	3.1	154.1	2.5	161.0	3.0	137.1	1.2	140.8	0.9	095.6	1.8	158.2	0.3	149.6	6.0	300
350	180.9	3.5	169.3	3.3	175.7	2.9	151.3	1.7	168.5	1.0	093.9	1.4	130.5	0.2	154.0	6.8	350
400	192.1	3.4	180.3	3.4	197.0	2.7	158.9	2.2	164.9	1.1	116.7	0.6	147.6	0.2	159.3	7.0	400
450	200.2	3.1	183.6	3.2	217.0	3.0	165.4	2.5	158.9	1.2	123.0	1.4	171.4	0.3	166.0	8.0	450
500	207.4	2.4	184.4	3.0	223.8	4.0	173.6	2.5	153.3	1.3	113.1	1.8	186.2	0.4	171.2	9.0	500
550	218.2	2.6	190.8	2.4	224.2	5.5	179.5	3.2	141.0	1.3	096.0	1.9	194.6	0.5	175.1	10.1	550
600	221.0	3.4	203.4	3.1	224.2	6.6	178.5	3.1	139.7	1.7	109.4	2.4	199.7	0.7	179.4	11.2	600
650	223.6	4.3	209.2	3.6	221.5	4.9	175.7	3.2	144.0	2.1	115.1	2.5	203.1	0.8	183.2	12.4	650
700	230.7	4.8	211.8	4.0			172.9	3.1	141.9	2.5	121.3	2.2	199.6	0.8	184.2	8.2	700
750	231.9	5.0	213.3	4.4			165.3	3.6	130.4	2.8	139.1	2.8	193.2	0.8	188.3	9.7	750
800	224.1	4.6	215.4	4.6			154.1	4.3	135.2	3.7	130.5	3.0	181.6	0.8	187.1	9.8	800
850	219.3	4.3	203.3	4.1			145.8	5.1	132.5	3.9	148.2	2.3	164.2	1.2	190.9	8.4	850
900	214.7	3.5	192.8	4.1			142.3	5.9	133.2	4.2	150.6	3.8	156.0	1.6	195.6	8.5	900
950	209.8	3.1	179.4	4.2			140.9	6.1	140.5	4.7	147.2	4.8	143.4	1.3	201.1	9.3	950
1000	202.7	2.6	173.1	3.9			144.1	6.6	151.3	5.4	148.7	4.2	137.1	1.1	209.2	8.5	1000
1050	187.7	2.5	178.4	3.2			143.9	5.8	156.3	5.4	145.8	4.8	133.2	2.7			1050
1100	171.9	2.7	184.4	3.1			146.2	5.1	151.3	5.9			130.4	4.2			1100
1150	169.7	3.3	184.5	2.9			148.4	4.6	147.0	5.8			137.3	5.6			1150
1200	175.8	3.5	178.4	2.8			149.6	4.5	144.6	5.3			157.1	5.4			1200
1250							157.0	5.7	147.2	4.0			155.0	5.6			1250
1300							161.8	7.0	159.7	5.1			160.2	6.2			1300
1350													165.1	6.8			1350
1400													166.5	7.0			1400
1450													166.4	7.2			1450
1500													165.6	7.4			1500

Table 9 (continued). PILOT BALLOON MEASUREMENTS

Z(m)	Ascr #K-2 15 Apr 69 0835 EST Single		Ascn #K-1 17 Apr 69 0800 EST Double		Ascn #K-2 17 Apr 69 0830 EST Double		Ascn #K-3 17 Apr 69 0900 EST Double		Ascn #K-4 17 Apr 69 0930 EST Double		Ascn #K-5 17 Apr 69 1000 EST Double		Ascn #K-6 17 Apr 69 1030 EST Double		Ascn #K-7 17 Apr 69 1100 EST Double		Z(m)
	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	
Sfc		0.0		0.0		0.0		0.0		0.0	180.0	3.5	180.0	2.2	180.0	2.2	Sfc
50	123.7	2.0		0.0	140.8	0.1	156.3	0.7	189.6	1.0	202.0	5.0	211.5	3.2	182.0	3.3	50
100	124.8	3.0	210.6	1.2	186.3	1.2	190.5	1.2	208.1	1.5	221.7	6.3	223.5	4.4	184.0	4.4	100
150	130.3	3.2	206.3	3.5	201.2	3.1	226.4	2.6	225.3	2.0	217.9	6.4	211.5	5.9	195.0	5.1	150
200	147.2	3.4	202.1	6.0	223.7	5.0	222.5	5.0	228.9	2.6	214.3	6.6	208.9	6.2	203.1	6.0	200
250	144.9	5.5	210.5	8.0	223.7	5.7	228.3	5.3	227.6	3.5	213.8	6.6	211.4	6.2	206.5	5.6	250
300	150.9	6.7	210.9	7.9	218.7	7.2	232.8	5.8	230.9	3.7	218.3	6.4	213.4	6.2	210.4	5.3	300
350	158.4	7.4	210.4	7.2	217.8	7.4	232.4	7.0	232.7	4.2	223.0	6.3	214.0	6.1	214.2	5.0	350
400	166.9	7.6	211.8	6.7	219.6	7.7	230.2	8.3	232.7	5.0	228.1	6.1	214.6	6.0	218.1	4.9	400
450	173.4	8.4	215.1	7.3	222.5	8.2	227.1	8.8	234.0	5.6	234.2	5.7	222.1	5.9	222.2	4.8	450
500	178.9	8.9	217.9	7.8	224.1	8.7	227.0	9.5	235.8	6.0	239.9	4.8	232.7	5.8	226.4	4.7	500
550	184.0	9.3	222.0	7.8	227.3	8.5	228.7	9.8	235.1	7.6	242.1	4.3	229.7	6.2	230.9	4.6	550
600	188.3	9.9	226.7	7.5	231.6	8.0	232.1	9.3	235.7	9.0	245.1	4.8	228.8	6.5	235.4	4.5	600
650	190.1	9.6	231.7	7.1	235.8	7.9	238.0	8.5	241.4	8.3	255.9	5.7	231.5	6.6	240.0	4.5	650
700	195.3	8.8	234.8	7.2	239.2	8.1	242.6	7.6	242.7	8.0	256.1	5.3	232.9	6.8	244.6	4.5	700
750	200.3	8.9	241.6	6.7	243.2	7.9	249.8	6.9	243.7	8.4	249.0	6.4	232.9	7.3	249.2	4.6	750
800			252.0	6.3	251.6	7.3	255.9	7.1	251.0	9.0	236.8	9.4	235.8	7.4	249.4	4.4	800
850			258.0	6.7	259.0	7.3	258.4	7.7	256.3	8.7	243.8	7.3	246.0	6.8	248.5	4.2	850
900			262.2	6.8	263.0	7.8	258.8	8.0	258.9	7.7	237.8	12.2	247.7	7.2	253.6	3.9	900
950			268.1	6.3	267.9	7.2	261.8	7.7	258.0	7.5			249.0	7.1	249.7	4.3	950
1000			272.8	6.3	270.5	6.8	266.2	7.1	256.8	8.2			249.9	6.3	246.5	4.6	1000
1050			268.9	7.7	271.5	6.7	270.0	7.5	259.4	8.6			251.8	6.0	248.2	4.7	1050
1100			269.6	8.0	278.9	6.2	267.4	9.0	266.3	8.6			256.9	5.5	249.6	4.8	1100
1150			271.2	7.9	272.6	7.3	265.0	10.3					257.6	6.4	249.8	4.9	1150
1200			269.5	8.0	264.8	8.8	281.7	7.4					256.7	8.0	249.9	4.9	1200
1250							271.4	10.2					258.9	8.7	252.9	5.0	1250
1300													262.9	8.2	258.2	5.2	1300
1350													268.4	7.5			1350
1400													270.8	8.0			1400
1450													272.9	8.5			1450
1500													276.8	7.9			1500

Table 9 (continued). PILOT-BALLOON MEASUREMENTS

	Ascn #K-1 18 Apr 69 0700 EST Double		Ascn #K-2 18 Apr 69 0730 EST Double		Ascn #K-3 18 Apr 69 0800 EST Double		Ascn #K-4 18 Apr 69 0830 EST Double		Ascn #K-5 18 Apr 69 0930 EST Double		Ascn #K-1 28 Apr 69 0730 EST Double		Ascn #K-2 28 Apr 69 0800 EST Double		Ascn #K-3 28 Apr 69 0945 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0		0.0	250.0	2.2		0.0		0.0	Sfc
50	295.0	0.8	107.6	0.7	317.2	0.3	179.1	0.4	214.0	1.1	207.4	5.7	206.2	3.4	201.6	2.0	50
100	274.4	1.0	141.0	1.2	190.7	0.8	178.2	1.7	202.4	2.2	204.9	7.1	208.9	5.7	199.7	4.1	100
150	240.6	1.2	170.8	2.1	196.1	2.4	179.0	3.7	196.0	3.1	210.2	8.0	212.1	7.1	202.8	5.4	150
200	228.0	1.9	191.1	3.6	212.4	3.8	192.2	4.5	203.7	3.4	211.0	10.4	211.4	8.3	207.5	6.2	200
250	228.5	2.7	200.9	4.8	219.2	5.2	203.1	5.1	214.2	3.8	211.6	12.4	210.8	9.5	209.4	7.1	250
300	225.8	3.4	208.5	6.2	224.6	6.4	210.9	5.7	212.1	4.8	212.8	13.7	212.6	10.9	212.3	9.3	300
350	222.5	4.3	214.5	7.8	228.0	7.3	217.1	5.8	209.1	5.8	215.7	14.9	217.2	12.5	215.5	12.0	350
400	220.2	5.8	217.6	8.9	229.6	7.9	220.9	5.4	211.6	5.4	218.4	16.3	218.3	13.5	217.9	14.1	400
450	216.1	6.2	217.9	9.9	230.2	8.1	223.3	5.4	208.2	6.0	219.3	18.1	218.8	14.6	218.4	14.4	450
500	215.2	7.5	219.7	10.3	230.4	8.2	227.8	5.2	207.6	6.6	220.8	19.7	221.3	16.7	219.4	14.2	500
550	215.7	8.8	220.7	10.8	232.0	8.0	223.0	5.6	208.2	7.4	224.1	21.0	223.2	18.8	221.2	14.7	550
600	215.9	9.6	221.5	11.0	232.2	8.1	222.1	6.2	210.5	7.7	226.9	22.3	224.8	20.9	222.1	16.2	600
650	215.6	10.8	223.0	10.4	229.6	9.0	225.6	5.8	211.2	8.2	229.0	23.6	226.1	23.0	222.7	14.7	650
700	216.0	12.0	226.4	8.8	228.0	9.6	222.3	7.1	211.1	8.8	231.6	20.7	227.9	23.7			700
750	217.7	12.6	222.2	10.6	226.8	10.1	221.4	6.6	210.4	9.1	230.8	24.8	230.3	23.5			750
800	220.3	12.7	221.1	11.4	226.8	10.3	220.5	7.7	209.7	10.2	231.0	23.2	232.0	23.2			800
850	223.7	12.0	221.7	9.4	226.9	10.5	219.6	8.7	210.7	10.4	231.5	20.8	232.7	22.8			850
900	223.2	13.0	219.3	11.9	226.9	9.8	218.5	9.5	212.4	9.9	230.6	26.7	232.9	22.7			900
950	225.7	11.5	217.8	13.4	225.4	9.1	216.8	10.3	212.1	9.9	232.2	17.8	232.8	22.5			950
1000	224.9	13.9	216.9	13.4	220.2	9.9	216.4	11.1	213.9	10.0	231.1	20.9	233.7	19.6			1000
1050	224.4	15.4	218.7	11.9	217.1	12.3	216.5	12.0	212.6	12.5			232.8	23.2			1050
1100	225.5	13.3	217.9	12.7	217.5	14.6	214.8	13.6					231.9	28.7			1100
1150	225.6	15.1	217.6	14.0	217.2	14.0	214.6	13.4					232.0	26.3			1150
1200	230.0	9.1	217.8	14.4	215.6	10.5							233.8	15.4			1200
1250	223.9	14.7			215.4	11.3							231.9	21.7			1250
1300					216.9	14.4							232.4	24.0			1300
1350					219.0	15.9											1350

Table 9 (continued). PILOT-BALLOON MEASUREMENTS

	Ascn #K-1 30 Apr 69 0611 EST Single		Ascn #K-2 30 Apr 69 0700 EST Double		Ascn #K-3 30 Apr 69 0730 EST Double		Ascn #K-4 30 Apr 69 0800 EST Double		Ascn #K-5 30 Apr 69 0830 EST Double		Ascn #K-6 30 Apr 69 0900 EST Double		Ascn #K-7 30 Apr 69 0930 EST Double		Ascn #K-8 30 Apr 69 1000 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc	330.0	1.7	330.0	1.7	350.0	1.7	360.0	1.3	360.0	2.2	360.0	2.6	040.0	3.1	040.0	2.2	Sfc
50	343.2	2.9	343.4	2.8	007.9	3.1	013.6	1.6	025.3	3.5	025.3	4.4	033.7	3.1	030.6	3.1	50
100	359.2	3.1	357.1	3.7	012.0	4.0	026.5	2.0	015.7	3.8	030.1	4.5	027.5	3.1	021.8	3.3	100
150	022.1	2.8	011.5	3.9	003.2	1.7	030.2	2.8	006.2	3.9	032.8	4.4	017.7	3.1	012.4	2.9	150
200	025.0	4.2	010.5	4.5	009.2	5.3	031.8	3.6	009.8	3.9	033.5	3.9	006.4	3.3	018.2	4.0	200
250	023.0	5.3	012.1	4.6	013.7	4.8	025.6	3.9	016.3	3.7	032.2	3.5	356.7	3.6	017.0	4.1	250
300	018.1	5.9	017.6	4.7	005.5	4.7	022.8	4.4	030.4	3.5	010.2	2.9	007.8	3.6	021.5	3.7	300
350	007.7	6.0	023.6	5.6	008.5	4.9	024.2	5.0	037.7	3.5	353.0	3.5	017.6	3.6	036.3	3.9	350
400	003.0	6.8	027.9	5.7	009.2	4.9	028.4	5.8	035.9	3.7	009.6	4.4	015.9	3.4	032.7	5.4	400
450	007.	7.4	035.3	6.0	015.7	4.1	030.2	6.0			029.3	4.6	016.5	3.0	035.2	4.8	450
500	015.3	7.9	034.6	6.0	028.6	7.0	034.1	6.0			034.9	4.2	035.3	2.4	039.4	4.8	500
550	016.4	7.7	031.8	6.1			038.5	5.9			038.4	3.7	051.7	2.3	040.6	5.3	550
600	021.6	8.1	028.4	6.4			041.7	5.1			043.4	3.2	055.8	2.5	042.1	5.7	600
650	025.9	8.3	024.7	5.8							050.3	2.7	061.2	2.7	045.9	5.5	650
700	025.6	7.9	021.2	5.3									065.8	3.0	051.9	5.2	700
750	016.0	6.7	018.6	5.1									068.0	2.9	063.0	4.5	750
800	359.8	5.9	018.1	4.5													800
850	353.9	5.6															850
900	350.5	5.3															900
950	347.6	5.2															950

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #K-9 30 Apr 69 1030 EST Double		Ascn #K-1 1 May 69 0630 EST Combined		Ascn #K-2 1 May 69 0700 EST Double		Ascn #K-3 1 May 69 0730 EST Double		Ascn #K-4 1 May 69 0800 EST Double		Ascn #K-5 1 May 69 0830 EST Double		Ascn #K-6 1 May 69 0900 EST Double		Ascn #K-7 1 May 69 0930 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	Sfc
50	057.6	1.3	067.3	0.6	013.5	0.4	033.6	0.5	077.6	1.3	117.7	0.7	073.5	1.6	166.4	1.6	50
100	057.6	2.6	067.3	1.2	058.2	1.6	058.6	2.0	077.0	2.3	115.5	1.3	076.9	2.3	166.3	2.5	100
150	067.4	3.4	077.5	2.2	076.3	3.5	072.5	4.1	080.9	3.2	105.9	1.3	086.0	1.8	165.8	2.4	150
200	068.4	3.2	093.3	5.4	091.1	5.6	083.3	5.7	093.2	3.8	093.7	1.9	091.1	1.9	166.4	2.2	200
250	059.4	2.3	101.6	6.9	099.1	6.2	092.7	5.7	107.6	4.2	095.0	2.3	096.6	2.0	169.6	2.0	250
300	050.9	2.3	108.0	7.3	108.3	6.4	116.6	6.4	116.6	4.5	112.0	2.4	092.0	2.0	157.4	1.9	300
350	043.6	2.5	114.8	7.2	120.2	6.4	124.1	6.9	126.7	4.6	118.0	2.2	088.5	1.7	139.5	2.0	350
400	035.2	2.7	120.3	6.9	123.3	6.4	130.0	5.7	136.0	4.5	130.9	2.5	108.5	1.3	124.2	2.2	400
450	026.9	3.0	126.2	6.6	127.2	6.5	139.8	4.8	148.3	3.8	143.8	3.1	143.2	1.0	112.5	2.6	450
500	020.2	3.3	133.3	5.9	131.5	6.4	146.0	5.0	158.8	3.7	150.7	2.5	132.2	2.4	105.4	3.0	500
550	015.4	3.8	138.9	5.4	136.9	5.6	150.0	4.7	158.2	4.4	154.7	3.1	127.0	2.8	106.0	3.4	550
600	011.7	4.3	141.6	5.0	140.8	4.0	150.9	3.8	155.2	3.6	161.5	3.0	124.6	2.9	106.5	3.6	600
650	008.8	4.9	134.3	3.0	136.6	3.4	142.0	3.2	144.7	2.4	171.6	2.5	113.2	2.8	106.4	3.1	650
700	018.5	5.3	102.8	1.4			123.1	2.8	125.2	2.3	145.0	1.6	100.2	2.7	103.1	2.8	700
750	029.3	4.9	066.7	1.6			090.6	2.2	112.2	2.4	126.6	1.8	095.5	2.2	103.5	2.4	750
800	025.3	5.7	046.6	2.8			058.3	2.0	091.9	2.0	121.9	2.3	074.8	1.3	117.5	1.6	800
850	034.8	6.5	025.0	2.8			050.2	1.9	024.0	1.7	109.8	2.3	029.8	0.9	096.4	0.7	850
900	033.8	6.4	003.4	2.4			023.0	1.6	357.2	1.5	084.6	2.1	353.3	1.2	018.8	0.5	900
950	035.1	3.8	334.2	1.9					017.3	0.2	055.7	1.4	342.1	1.4		0.0	950
1000	032.0	4.7	302.8	1.8					325.0	0.5	345.1	1.3	344.8	1.0	332.8	0.4	1000
1050	026.2	4.9	285.0	2.0					306.8	1.0	314.2	1.8	323.8	0.9	276.4	0.5	1050
1100	023.0	4.8	265.2	2.7					292.5	1.7	300.2	1.9	295.2	1.1	263.5	1.1	1100
1150	035.4	5.5	251.6	3.3					282.0	2.2	289.6	2.1	274.9	1.3	272.1	1.9	1150
1200	038.3	6.2	244.4	3.8					274.7	2.8	281.4	2.5	263.8	2.4	260.0	2.1	1200
1250	039.5	6.4	241.6	4.1					265.0	3.2	267.9	2.9	259.0	3.1	256.1	2.6	1250
1300	039.5	6.1	237.4	4.2					255.8	3.8	255.8	3.4			252.2	3.0	1300
1350	039.4	6.2	233.6	4.3							256.4	3.7			250.3	3.5	1350
1400	034.6	4.8	232.5	4.4							251.8	4.3					1400
1450	027.4	3.6	231.4	4.5							245.9	5.1					1450
1500			230.9	4.4													1500

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #K-8 1 May 69 1000 EST Double		Ascn #K-9 1 May 69 1030 EST Double		Ascn #K-10 1 May 69 1100 EST Double		Ascn #K-1 2 May 69 0630 EST Double		Ascn #K-2 2 May 69 0700 EST Double		Ascn #K-3 2 May 69 0730 EST Double		Ascn #K-4 2 May 69 0800 EST Single		Ascn #K-5 2 May 69 0830 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	Sfc
50	200.5	1.3	282.6	0.3	255.6	1.1	267.5	4.5	267.3	4.1	056.9	0.4	114.0	1.5	260.2	0.3	50
100	196.9	2.1	283.0	0.6	254.8	1.8	267.5	9.0	267.3	8.3	085.8	1.0	114.0	3.0	174.5	1.0	100
150	184.4	1.9	286.4	0.5	251.0	2.1	256.9	6.1	259.0	6.2	117.7	1.5	116.1	4.2	174.1	2.4	150
200	189.3	1.6	292.6	0.3	234.0	2.5	172.7	2.7	163.8	2.6	163.8	2.8	168.9	2.7	186.6	3.5	200
250	196.0	1.1	255.8	0.2	246.9	2.3	198.1	3.5	183.7	3.7	181.9	3.6	199.1	3.5	198.0	3.9	250
300	195.1	0.4	204.9	0.6	237.1	2.3	206.1	5.0	199.8	4.2	195.9	4.1	207.5	4.2	211.7	3.7	300
350	038.1	0.2	194.6	1.1	226.9	2.1	213.9	5.3	217.4	4.6	208.6	4.4	217.9	4.0	219.1	3.5	350
400	055.1	0.7	190.6	1.6	236.1	2.4	225.4	5.5	227.4	5.1	220.0	4.5	225.4	4.4	225.4	3.3	400
450	058.2	1.1	188.5	2.1	240.5	2.1	233.1	6.0	231.8	5.3	226.0	5.2	231.3	4.6	234.1	3.7	450
500	066.4	1.2	187.2	2.6	238.9	2.2	236.5	6.2	234.6	4.9	228.7	4.5	235.7	4.3	231.7	2.4	500
550	089.4	0.9	188.4	1.3	255.3	1.8	240.1	5.7	236.9	3.7	229.7	2.4	232.0	2.5	218.3	1.4	550
600	120.7	0.9	342.8	0.1	269.0	1.8	240.2	4.6	239.7	2.5	231.1	1.5	240.6	1.1	217.4	0.9	600
650	153.3	1.1	085.7	0.1	270.1	2.0	244.1	3.8	275.0	1.4	277.0	1.1	283.7	1.0	269.9	1.1	650
700	165.4	1.6	118.4	0.4	321.8	1.8	253.2	3.1	280.2	2.1			291.3	1.6	276.6	1.7	700
750	160.2	1.2	114.3	0.6			290.0	1.8	278.6	2.5			285.9	1.9	277.3	2.2	750
800	142.2	1.0	107.9	0.7			281.3	2.4	282.6	2.1			288.3	2.1	276.6	2.4	800
850	195.7	1.1	111.3	1.0			261.1	4.3	287.0	2.1			278.2	1.8	274.8	2.1	850
900	198.5	1.7	122.7	1.4			263.3	3.1	270.8	2.2			264.9	1.5	264.5	1.9	900
950	211.1	2.2	128.9	1.8			263.7	2.3	267.4	2.0			249.1	1.5	252.6	1.9	950
1000	210.3	2.6	103.1	1.1			258.2	2.2	262.0	1.7			234.8	1.7	244.4	1.5	1000
1050	216.3	2.3	053.6	0.6			256.1	2.4	250.9	1.7			219.5	1.7		0.0	1050
1100	222.8	2.7	018.8	0.2			258.3	3.1	242.6	1.7			211.0	2.0	225.9	1.4	1100
1150	243.1	2.9	244.4	0.2			284.4	1.1	239.7	2.0			202.2	2.1	214.8	2.0	1150
1200			207.6	0.6					228.4	1.4			194.7	2.1	201.5	2.1	1200
1250			195.1	1.2									189.8	1.6	204.4	2.4	1250
1300			175.2	1.5									201.6	0.9	198.4	2.1	1300
1350			175.1	1.9													1350
1400			209.7	1.7													1400
1450			205.1	1.5													1450
1500			194.9	1.3													1500

Table 9 (continued). PILOT-BALLOON MEASUREMENTS

	Ascn #K-6 2 May 69 0900 EST Double		Ascn #K-7 2 May 69 0930 EST Double		Ascn #K-8 2 May 69 1000 EST Double		Ascn #K-9 2 May 69 1030 EST Double		Ascn #K-10 2 May 69 1100 EST Double		Ascn #K-1 3 May 69 0600 EST Single		Ascn #K-2 3 May 69 0700 EST Double		Ascn #K-3 3 May 69 0730 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	Sfc
50	141.3	0.2	197.1	1.6	180.1	0.5	198.9	1.6	182.2	2.7	222.8	1.2	202.8	1.7	198.2	2.2	50
100	174.2	0.9	193.8	2.1	185.5	1.0	199.6	2.6	192.7	2.8	219.0	3.0	207.9	3.3	200.2	3.7	100
150	183.9	2.0	192.2	2.0	138.2	1.7	202.4	2.4	196.3	2.9	217.3	5.2	216.6	4.7	214.5	2.7	150
200	197.6	3.0	193.8	2.0	198.1	2.1	207.8	2.4	195.1	3.4	225.2	7.0	235.7	6.0	239.8	3.5	200
250	210.3	3.1	195.2	2.1	194.7	2.1	206.5	2.9	192.0	3.5	240.0	7.9	250.6	7.6	251.0	5.7	250
300	218.7	3.0	194.4	2.1	187.4	1.9	196.6	3.1	196.1	4.2	256.6	9.0	262.1	9.5	261.2	8.6	300
350	227.4	2.6	192.8	2.2	200.0	1.9	197.3	3.0			266.6	10.7	272.8	11.8	271.3	11.0	350
400	237.9	2.4	192.9	1.7	201.7	1.5	192.3	4.0			275.7	13.0	277.4	13.4	281.1	13.2	400
450	235.2	1.4	169.3	1.7	196.0	1.2	195.5	3.8			281.6	14.9	280.3	14.8	285.6	15.3	450
500	185.1	0.9	163.6	1.6	182.5	1.0	190.4	3.1			285.8	15.8	294.4	14.7	287.2	17.7	500
550	173.6	1.2	211.3	1.1	202.6	1.3	174.7	2.2			289.7	15.6	290.9	17.4	287.9	20.1	550
600	201.0	1.0	245.3	1.8	213.0	1.7	163.0	2.0			288.7	16.4	289.7	18.0	297.7	14.8	600
650	260.6	1.0	255.5	2.3	213.3	2.0	151.5	2.0			289.8	16.0	289.6	17.7	289.4	17.8	650
700	270.2	1.6	245.0	1.6	199.0	2.1	145.8	2.4			290.8	15.3	288.6	18.6	298.0	18.3	700
750	265.3	2.2	233.1	1.8	184.0	2.3	140.2	2.8			288.4	15.7	287.0	19.3	288.1	17.9	750
800	260.7	2.4	219.0	1.8	176.0	2.7	134.8	3.2			286.3	16.6	286.4	18.5	286.6	18.1	800
850	260.9	1.9	206.2	2.0	176.3	2.9	144.2	3.6			284.2	16.7	287.3	15.8	285.6	18.4	850
900	250.7	1.7	201.5	2.5	181.2	3.3	155.8	4.2			283.0	17.5	283.7	15.7	284.0	19.6	900
950	238.2	1.6	194.1	2.9	184.7	3.7	163.4	4.5			282.7	17.6	281.3	19.0			950
1000	215.7	1.4	193.5	3.1	183.8	3.9	170.6	4.9					279.6	22.4			1000
1050	210.4	2.0	193.4	3.3	183.5	3.8	184.5	5.1					279.3	17.2			1050
1100	218.6	3.2	193.3	2.6	183.8	3.5	195.2	4.8					279.2	15.8			1100
1150	214.9	2.9	196.7	1.3	196.7	2.2	206.9	3.8					279.4	16.8			1150
1200	206.7	2.7	304.1	0.3	230.4	1.3	240.6	1.9					280.5	14.7			1200
1250					291.7	1.4							280.5	15.9			1250
1300					331.1	1.5							280.4	13.7			1300
1350													281.2	17.1			1350

Table 9 (continued). PILOT BALLOON MEASUREMENTS

Z(m)	Ascn #K-4 3 May 69 0800 EST Combined D(°)	S(mps)	Ascn #K-5 3 May 69 0830 EST Single D(°)	S(mps)	Ascn #K-6 3 May 69 0900 EST Double D(°)	S(mps)	Ascn #K-7 3 May 69 0930 EST Double D(°)	S(mps)	Ascn #K-8 3 May 69 1000 EST Double D(°)	S(mps)	Ascn #K-1 5 May 69 0630 EST Double D(°)	S(mps)	Ascn #K-2 5 May 69 0700 EST Double D(°)	S(mps)	Ascn #K-3 5 May 69 0730 EST Double D(°)	S(mps)	Z(m)
Sfc		0.0	240.0	1.7	270.0	2.2	270.0	3.1	270.0	2.2		0.0		0.0		0.0	Sfc
50	202.4	1.1	294.7	3.5	269.0	3.8	271.2	4.7	270.5	3.5	023.4	0.9	047.3	2.0	099.0	0.6	50
100	202.4	2.2	297.2	2.9	268.0	5.4	277.5	6.1	272.2	4.4	030.4	2.9	050.6	3.8	071.6	1.4	100
150	213.3	3.5	231.9	3.2	266.3	6.0	280.1	7.1	273.9	5.3	052.7	4.6	054.1	5.4	064.7	2.7	150
200	223.7	4.8	267.6	4.0	264.0	5.9	277.7	7.6	266.1	6.3	082.5	6.2	066.2	5.9	076.9	4.5	200
250	251.1	4.8	276.4	5.7	266.3	5.7	274.6	7.9	258.9	7.4	083.9	8.0	075.0	8.3	078.4	6.4	250
300	262.0	6.8	277.3	7.3	269.4	5.5	267.7	7.6	259.8	7.4	083.8	8.8	079.7	10.1	081.5	7.8	300
350	264.4	9.4	279.7	8.2	267.0	7.1	271.5	8.2	263.8	6.9	085.3	7.5	084.3	9.2	086.6	8.4	350
400	270.4	11.3	284.5	9.0	269.7	8.9	276.8	9.6	267.6	6.7	083.2	5.8	090.1	6.4	093.0	7.4	400
450	275.1	13.2			275.8	11.2	277.9	10.2	269.8	7.1	072.2	4.3	085.4	5.0	087.3	5.6	450
500	291.6	16.0			279.2	12.6	279.4	10.5	271.9	7.5	057.2	4.1	066.2	4.3	074.4	4.2	500
550	288.8	18.0			293.0	11.3	280.5	10.6	274.6	8.0	047.3	4.6	052.7	4.6	060.4	3.7	550
600	288.5	17.9			289.9	14.2	281.6	10.6	277.9	8.6	041.7	4.1	046.8	4.9	049.8	3.7	600
650	288.2	18.5			284.0	18.3	277.1	12.3	280.0	8.8	035.7	4.4	029.9	4.8	038.2	4.4	650
700	287.9	20.0			286.8	17.2	275.2	14.0	281.0	8.7	018.7	5.0	030.4	6.5	017.0	6.2	700
750	287.7	20.8			289.6	16.8	280.4	15.3	281.1	9.0	010.8	5.9	359.4	6.9	000.4	7.5	750
800	287.6	19.0			292.0	17.7			280.7	9.5	004.2	6.6	002.0	8.0	355.2	7.8	800
850	289.3	19.4			293.8	18.3			280.1	10.1	354.5	7.7	007.2	8.8	355.0	7.6	850
900	292.0	21.4			294.0	17.2			277.8	11.0	358.1	8.4	354.9	7.9	354.6	7.3	900
950	286.8	20.4							275.8	11.9	358.7	8.2	337.8	6.3	349.4	7.2	950
1000									275.2	12.0	349.9	7.2			348.5	6.8	1000
1050									277.1	10.4	355.6	7.4			354.4	7.0	1050
1100									281.8	10.1	347.8	6.6			356.1	6.8	1100
1150									282.2	10.8	347.6	6.7			354.7	6.8	1150
1200									278.0	11.7	350.0	6.8			005.8	8.5	1200

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #K-4 5 May 69 0800 EST Double		Ascn #K-5 5 May 69 0830 EST Double		Ascn #K-6 5 May 69 0900 EST Double		Ascn #K-7 5 May 69 0930 EST Double		Ascn #K-8 5 May 69 1000 EST Double		Ascn #K-9 5 May 69 1030 EST Double		Ascn #K-1 6 May 69 0608 EST Double		Ascn #K-2 6 May 69 0630 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0		0.0	360.0	1.3		0.0		0.0	Sfc
50	080.6	1.4	070.5	1.5	052.2	1.2	125.1	1.2	048.5	2.0	023.4	1.7	036.1	2.1	041.2	1.1	50
100	076.7	2.2	070.5	3.1	056.5	2.0	124.2	2.4	054.8	3.0	046.9	2.1	048.7	3.5	054.5	2.1	100
150	060.4	1.8	074.6	3.6	069.7	1.8	111.5	1.9	067.8	2.9	065.8	2.4	069.4	4.3	077.8	3.3	150
200	053.8	2.2	078.5	3.9	078.0	2.3	085.0	1.4	077.4	3.0	052.8	2.3	078.3	5.1	087.8	5.3	200
250	064.1	3.9	084.7	3.8	079.6	3.3	021.4	1.5	070.3	2.7	039.6	2.4	091.6	5.4	106.7	4.0	250
300	070.9	5.4	092.1	3.8	077.3	4.1	021.8	1.9	062.2	2.6	032.4	2.3	095.8	4.2	117.7	3.1	300
350	079.1	6.8	090.3	3.5	083.7	4.0	027.4	2.1	056.2	2.4	059.1	1.4	093.3	3.1	106.6	2.5	350
400	083.9	7.2	092.1	4.7	095.4	3.6	035.5	2.0	054.1	2.3	071.6	1.0	085.3	3.4	093.8	2.3	400
450	088.0	6.9	093.5	4.8	094.7	3.2	032.1	1.9	051.7	2.2	040.6	0.9	074.6	3.2	090.1	2.2	450
500	087.7	5.8	089.8	4.4	090.5	3.0	022.5	2.3	049.0	2.5	006.8	1.4	061.2	3.4	077.4	2.6	500
550	081.1	4.6	084.4	4.3	074.2	3.5	033.6	3.1	046.9	2.8	012.6	1.6	049.5	3.2	041.6	2.5	550
600	059.8	4.0	063.1	4.4	057.0	4.2	037.7	4.3	044.2	3.2	021.4	1.8	026.0	2.8	354.9	2.6	600
650	042.2	4.7	040.2	5.2	041.3	5.3	033.2	6.0	040.4	3.6	039.9	2.7	353.6	3.0	359.7	2.5	650
700			023.0	6.9	027.9	7.0	031.4	7.5	037.1	5.2	045.6	3.7	343.9	3.4	000.7	2.7	700
750					019.3	8.1	029.3	7.9	036.5	7.5	041.4	4.6	353.5	4.0	350.5	3.4	750
800					014.4	8.3	020.1	7.4	028.7	7.5	037.7	5.5	358.0	4.5	357.1	3.7	800
850					014.3	8.0	010.7	7.4	018.8	7.4	029.7	6.3	358.7	4.6	350.8	3.9	850
900					016.5	8.2	009.1	7.7	009.5	7.2	025.6	6.9	357.5	4.8	355.4	3.5	900
950					010.6	7.5	008.4	7.7	010.0	7.5	023.8	7.1	351.4	4.7	000.2	3.6	950
1000					014.1	7.1	007.0	7.4	015.8	8.4	021.0	6.9	350.5	4.6	355.2	4.1	1000
1050					015.1	8.0	007.8	7.4	016.8	9.2	015.9	6.3	352.1	4.5	354.0	4.1	1050
1100					014.6	8.5	014.1	8.9	020.0	9.4	018.5	7.1	353.5	4.4	356.5	3.9	1100
1150					010.9	8.3	015.5	9.0	023.0	9.4	019.2	7.3	352.8	4.2	328.0	3.6	1150
1200					008.7	7.6	015.2	8.4	022.2	8.9	018.9	7.2	348.0	3.9	324.3	3.5	1200
1250					011.0	8.5	016.8	8.7	016.3	8.3	020.9	7.8	346.9	3.8			1250
1300					011.6	9.4	012.1	7.8	011.8	8.3	019.2	7.9	330.1	3.3			1300
1350					010.9	10.1			005.8	8.0	008.1	6.6	313.2	3.3			1350
1400					004.8	8.8			359.2	8.0	008.8	7.5	323.6	3.7			1400
1450									357.6	8.6	337.6	5.3	331.7	4.0			1450
1500											345.9	6.4	326.5	3.8			1500

Table 9 (continued). PILOT-BALLOON MEASUREMENTS

	Ascn #K-3 6 May 69 0700 EST Double		Ascn #K-4 6 May 69 0730 EST Double		Ascn #K-5 6 May 69 0800 EST Double		Ascn #K-6 6 May 69 0830 EST Double		Ascn #K-7 6 May 69 0900 EST Double		Ascn #K-8 6 May 69 0930 EST Double		Ascn #K-9 6 May 69 1000 EST Double		Ascn #K-10 6 May 69 1030 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0	360.0	1.3		0.0	350.0	0.8	360.0	0.8		0.0	Sfc
50	025.1	0.7	047.2	1.0	078.6	0.5	024.7	1.7	041.4	2.0	025.5	3.5	014.2	1.7	020.2	1.2	50
100	032.3	1.4	050.6	2.0	078.6	1.1	049.4	2.1	045.2	2.8	035.4	3.2	036.9	2.2	020.2	2.5	100
150	062.1	2.1	074.6	2.9	070.5	1.4	051.3	2.4	052.8	2.7	044.0	2.5	044.1	2.6	025.0	2.6	150
200	082.4	4.2	079.5	3.8	058.8	1.7	047.9	2.6	073.5	2.3	054.1	2.1	046.9	2.8	030.7	2.8	200
250	093.9	4.3	094.0	3.6	090.2	2.1	069.8	2.3	088.0	2.3	062.9	2.0	052.4	2.9	035.4	3.1	250
300	100.7	3.4	115.2	3.3	103.1	2.3	091.0	2.3	082.6	2.5	072.2	2.0	072.2	2.3	040.2	1.9	300
350	100.6	2.2	098.9	2.4	105.5	1.6	084.1	2.3	068.1	2.8	075.9	2.0	103.0	2.0	051.9	1.6	350
400	081.3	1.9	069.6	2.4	081.7	1.7	062.1	2.4	058.3	3.4	073.8	2.2	093.0	2.2	050.4	2.1	400
450	059.8	2.3	053.7	2.7	062.2	2.0	042.6	2.5	049.0	3.5	065.6	2.8	081.4	2.5	058.7	2.6	450
500	045.5	2.5	031.7	2.4	043.9	2.2	029.5	2.9	050.7	3.7	063.6	3.1	067.8	3.3	065.1	3.1	500
550	027.1	2.1	011.5	2.2	023.0	2.4	028.6	3.3	051.6	4.1	060.7	3.5	055.2	3.7	066.0	3.8	550
600	000.4	2.1	003.2	2.2	006.0	2.8	023.2	3.2	040.2	4.2	055.4	4.3	044.8	4.0	064.0	3.9	600
650	354.9	2.2	004.5	2.7	011.9	3.0	019.2	3.0	030.8	4.0	035.6	4.7	044.0	4.5	060.7	3.9	650
700	358.6	2.6	009.5	3.1	015.2	3.0	013.1	3.3	025.3	4.5	035.0	5.2	040.8	5.3	054.3	4.3	700
750	002.0	3.4	007.3	3.5	012.8	3.1	011.2	3.8	019.4	5.1	029.4	5.8	036.6	5.9	047.9	4.8	750
800	345.7	4.0	358.7	3.7	006.4	3.4	002.2	4.3	009.6	5.3	017.6	5.5	028.1	5.8	039.9	5.5	800
850	349.5	4.0	357.6	3.9	007.2	3.7	349.4	5.0	357.7	5.4	010.0	5.4	021.3	5.8	034.4	5.8	850
900	353.3	4.0	008.7	4.3	355.4	4.5	346.8	5.6	005.7	5.6	009.3	5.7	016.3	5.8	030.7	5.9	900
950	359.4	4.4	004.0	5.0	348.6	5.1	350.7	5.5	005.5	5.5	009.1	5.7	012.9	5.7	029.8	6.1	950
1000	003.0	5.0	353.8	5.2	343.3	5.5	349.6	5.6	358.9	5.4	005.1	5.5	010.4	5.7	021.2	5.7	1000
1050	347.8	4.7	336.3	5.0	337.3	5.7	351.0	6.0	354.7	5.5	000.6	5.5	005.9	5.9	004.9	5.1	1050
1100	332.5	4.2	337.4	5.2	341.2	5.5	352.4	6.4	359.2	6.2	358.9	5.8	359.9	5.7	355.6	5.0	1100
1150	328.9	4.2	339.6	5.5	345.6	6.0	352.1	6.8	356.7	6.1	359.9	6.1	359.6	5.7	002.7	5.9	1150
1200	332.8	4.4	340.7	5.4	341.0	5.4	352.7	6.4	351.5	5.7	003.3	6.5	004.0	6.2	359.3	5.4	1200
1250	336.4	4.7	340.2	5.0	346.7	6.2			354.1	5.9	359.7	6.1	006.3	6.6	006.3	6.3	1250
1300			341.6	5.0	349.5	6.6					354.1	5.4			353.5	5.2	1300
1350					348.7	6.3									357.4	5.7	1350

Table 9 (continued). PILOT-BALLOON MEASUREMENTS

	Ascn #K-1 7 May 69 0630 EST Double		Ascn #K-2 7 May 69 0700 EST Double		Ascn #K-3 7 May 69 0730 EST Double		Ascn #K-4 7 May 69 0800 EST Double		Ascn #K-5 7 May 69 0900 EST Double		Ascn #K-6 7 May 69 0930 EST Double		Ascn #K-7 7 May 69 1000 EST Double		Ascn #K-1 9 Oct 69 0710 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0		0.0		0.0	180.0	0.8		0.0	Sfc
50	032.9	1.1	064.4	0.3	091.3	0.5	078.6	0.5	199.8	1.8	190.7	1.1	180.8	2.1	252.6	1.0	50
100	044.9	2.2	068.1	1.2	083.8	1.2	092.8	1.1	196.8	3.1	190.7	2.3	182.8	3.2	270.6	1.2	100
150	061.0	3.6	075.3	2.3	092.7	1.7	118.4	1.7	190.3	3.4	200.1	2.4	192.2	2.6	353.0	1.6	150
200	081.9	2.9	102.7	2.8	126.5	2.3	150.5	2.8	188.2	3.6	213.8	2.3	202.1	2.3	038.1	5.4	200
250	130.2	2.4	137.5	2.8	154.2	2.7	171.8	3.7	192.1	3.9	227.5	2.4	206.4	2.4	038.1	6.8	250
300	164.4	3.2	171.3	3.6	186.1	3.4	194.0	4.8	200.7	4.4	229.4	3.0	214.7	2.5	038.1	8.1	300
350	182.8	4.5	191.6	5.1	207.1	6.2	209.3	6.1	219.0	4.5	230.7	3.6	229.5	3.1	046.5	7.8	350
400	194.2	5.8	203.0	7.0	215.1	7.7	227.9	6.6	233.8	5.6	245.8	5.0	243.6	4.5	054.9	7.4	400
450	204.5	7.6	215.6	8.6	223.4	8.2	249.0	7.2	241.6	7.5	257.0	7.0	251.7	6.0	061.4	6.6	450
500	211.2	9.4	220.0	10.0	236.6	9.2	251.9	8.0	274.9	8.6	267.7	8.9	257.4	7.1	067.6	6.3	500
550	215.9	10.3	226.8	10.4	245.8	8.8	257.1	8.7	269.3	10.0	266.8	9.6	259.8	8.4	070.6	6.3	550
600	219.5	11.3	237.9	9.9	263.3	8.3	254.3	9.1	266.8	10.7	263.6	10.0	253.0	9.6	076.4	6.2	600
650			242.6	9.7	254.1	9.3	255.5	9.5	265.1	10.9	260.8	10.5	255.3	9.2			650
700			240.4	10.2	246.5	10.3	254.5	9.9	263.4	10.9	259.6	10.3	253.7	8.8			700
750			235.7	11.0	244.2	9.8	253.2	10.3	274.5	7.3	258.3	10.2	253.1	8.9			750
800			235.5	10.2	241.7	9.4	252.0	10.6	262.2	10.0	256.6	10.6	254.0	8.9			800
850			239.0	8.3	238.0	10.0	251.0	11.1			256.5	10.7	256.3	8.7			850
900			234.1	10.6	235.2	10.7	248.0	11.3			257.3	10.6	257.0	8.8			900
950			232.7	11.8	234.7	10.3	246.2	10.3			257.0	12.2	257.3	9.1			950
1000			233.7	11.4							255.8	9.4	257.3	9.6			1000
1050			236.0	8.5									260.7	8.4			1050
1100			233.3	10.7									259.6	9.3			1100
1150			231.7	12.6									257.4	11.2			1150
1200			234.8	9.1									257.5	11.2			1200
1250			233.9	9.7													1250
1300			233.8	10.4													1300

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #K-2 9 Oct 69 0730 EST Double		Ascn #K-3 9 Oct 69 0800 EST Combined		Ascn #K-4 9 Oct 69 0830 EST Double		Ascn #K-5 9 Oct 69 0900 EST Double		Ascn #K-6 9 Oct 69 0930 EST Double		Ascn #K-7 9 Oct 69 1000 EST Combined		Ascn #K-1 10 Oct 69 0700 EST Single		Ascn #K-2 10 Oct 69 0730 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	Sfc
50	046.4	0.9	068.4	0.3	046.9	0.4	109.6	0.5	263.3	0.2	190.4	0.6	094.6	0.2	028.8	0.3	50
100	100.8	0.8	139.0	0.6	145.9	0.5	135.7	1.1	189.5	1.3	191.6	1.3	102.5	0.8	105.4	0.9	100
150	179.2	2.3	181.0	2.2	184.1	2.4	175.2	2.6	188.8	3.1	198.3	3.0	111.9	1.9	139.1	3.0	150
200	199.6	5.0	196.5	5.2	196.8	4.9	197.3	4.9	203.0	4.2	205.7	4.7	146.3	5.1	162.5	6.4	200
250	213.2	7.9	212.4	7.9	214.7	7.0	209.1	6.9	215.8	5.3	211.0	5.8	160.6	7.3	178.7	7.5	250
300	221.4	8.6	218.0	9.3	221.5	7.7	216.3	7.8	216.1	7.1	215.5	6.2	173.1	9.0	195.6	8.8	300
350	228.9	7.9	223.2	8.9	227.4	7.7	220.2	7.6	218.0	7.5	218.0	6.1	183.6	10.6	203.9	11.0	350
400	232.0	6.6	229.3	6.9	232.9	7.2	226.9	6.5	224.0	6.5	221.2	6.2	192.6	12.5	206.5	13.0	400
450	238.3	7.2	232.0	6.9	237.0	6.5	231.1	6.0	230.8	5.7	224.6	6.1	199.0	14.3	219.7	13.5	450
500	244.1	7.1	240.8	5.9	246.2	5.8	237.3	5.6	232.3	5.9	228.7	5.8	204.4	15.7			500
550	250.3	6.2	239.0	6.8	251.9	5.6	245.5	5.2	238.2	5.5	237.8	5.1	211.4	16.4			550
600	254.7	6.4	250.4	6.0	254.0	5.9	254.5	4.8	247.9	5.3	241.8	5.4					600
650	257.1	8.3	254.1	6.0	260.6	5.9	258.0	5.2	258.4	5.4	243.6	5.9					650
700			259.7	5.9	280.1	5.2	263.3	5.4	267.2	5.4	252.1	5.6					700
750			267.2	5.9	266.5	6.9	266.1	6.0	269.2	5.9	259.1	5.6					750
800			272.1	6.2	268.4	7.2	270.4	6.4	271.2	5.9	265.0	5.8					800
850			280.3	6.4	275.1	7.1	276.6	6.7	274.1	6.5	268.7	6.0					850
900			279.2	7.4	281.0	7.2	274.9	7.6	272.7	7.0	268.2	6.3					900
950			277.2	8.4	276.5	8.4	274.7	8.0	271.7	7.2	267.9	6.6					950
1000			277.2	8.8	284.1	7.6					271.9	6.1					1000
1050			281.4	8.2	278.4	8.7					269.9	6.1					1050
1100			281.3	8.1	283.9	7.3					264.0	6.8					1100
1150			276.6	8.8	276.5	10.0					264.9	7.0					1150
1200					273.1	11.8					263.6	7.4					1200

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #K-3 10 Oct 69 0800 EST Double		Ascn #K-4 10 Oct 69 0830 EST Double		Ascn #K-5 10 Oct 69 0900 EST Double		Ascn #K-6 10 Oct 69 0930 EST Double		Ascn #K-7 10 Oct 69 1000 EST Double		Ascn #K-8 10 Oct 69 1030 EST Double		Ascn #H-1 11 Oct 69 0700 EST Double		Ascn #H-2 11 Oct 69 0730 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0	240.0	2.6	210.0	2.6		0.0		0.0	Sfc
50	075.5	0.3	022.0	0.1	134.9	0.2	195.6	0.7	225.0	3.8	202.0	4.7	138.5	3.0	135.8	2.3	50
100	112.9	1.0	131.7	0.7	156.1	1.2	191.7	2.1	210.0	4.9	194.0	6.8	142.1	5.1	139.3	5.1	100
150	145.5	2.7	147.8	2.4	166.1	3.2	189.7	4.3	206.8	5.4	198.9	6.7	155.1	5.0	152.8	5.3	150
200	164.4	6.1	162.1	5.1	178.6	5.1	191.1	5.4	207.3	5.7	204.8	6.6	168.4	5.7	168.7	5.5	200
250	177.7	7.5	177.3	7.0	188.9	7.8	193.1	6.4	198.0	5.2	202.6	7.0	178.2	6.3	183.5	6.0	250
300	191.5	9.1	189.1	8.9	194.4	10.0	196.2	7.5	189.5	5.1	200.6	7.3	186.7	6.7	194.7	6.8	300
350	202.1	11.3	202.0	10.6	198.9	11.3	201.6	9.1	191.8	5.6	198.5	7.0	192.7	8.2	198.5	8.6	350
400	206.8	13.8	209.7	12.6	205.4	13.1	206.4	10.9	194.5	6.6	200.5	7.6	201.6	9.6	206.5	10.3	400
450	214.2	15.2	217.6	13.9	211.1	15.2	210.8	12.1	196.8	7.9	203.7	7.5	221.1	10.2	212.5	11.1	450
500					225.5	12.6	218.3	13.0	202.6	9.1	206.5	8.3	211.4	14.0	217.5	11.9	500
550					226.1	13.2	267.0	6.2	209.7	10.3	210.9	7.8	217.0	13.7	222.3	12.2	550
600					224.6	13.8	246.0	7.9	222.6	11.2	211.8	8.7	228.1	11.7	227.5	11.8	600
650					228.5	12.0	233.4	10.3	221.7	10.2	212.8	9.5	226.8	11.5	233.1	10.0	650
700					227.8	10.7	226.1	10.9	216.2	8.7	215.0	9.4	226.5	10.8	227.8	10.1	700
750					225.7	9.0	219.1	9.7	211.4	8.8	215.5	10.6	225.2	9.9	224.7	9.6	750
800					222.2	7.9	215.6	9.2	208.6	9.6	215.3	10.0	222.0	8.8	221.1	9.0	800
850					219.4	9.9	213.5	9.1	207.2	10.5	211.4	8.0	223.5	7.8	214.0	8.6	850
900					219.6	9.7	213.3	9.5	206.5	11.0	206.5	10.7	222.3	7.9	213.9	8.2	900
950					220.9	9.1	212.1	8.9	206.7	11.2	203.8	12.8	220.9	7.9	217.9	7.7	950
1000					222.3	9.5	212.0	10.4	207.4	10.8	203.0	10.8	220.4	7.4	210.9	5.6	1000
1050					222.8	9.1	212.2	12.5	209.2	9.7	202.0	10.1	219.5	6.6	207.9	5.8	1050
1100					222.6	8.9	214.6	9.4	209.2	10.3	201.5	11.3	218.3	7.0	205.5	7.4	1100
1150					221.6	9.7	213.1	9.6	208.6	11.4	201.9	12.1	220.0	6.6	206.3	7.7	1150
1200					222.3	7.8	211.7	11.0	208.5	12.1	203.7	12.4	222.0	6.1	208.3	6.8	1200
1250					220.9	9.0	212.3	12.9	208.6	12.8	205.0	12.9	220.5	6.4	209.2	6.4	1250
1300					219.1	13.0	212.8	12.8	208.6	13.2	205.0	14.4	211.9	5.2			1300
1350					221.0	10.4	213.9	7.6	208.5	13.7	204.9	15.8					1350
1400					221.6	10.0	213.8	10.4	208.7	13.4	204.9	16.0					1400
1450					220.0	12.8	213.7	13.2	209.5	12.4	204.7	14.8					1450
1500							213.8	13.7	210.0	11.1	205.3	14.1					1500

Table 9 (continued). PILOT-BALLOON MEASUREMENTS

	Ascn #H-3 11 Oct 69 0800 EST Double		Ascn #H-4 11 Oct 69 0830 EST Double		Ascn #H-5 11 Oct 69 0900 EST Single		Ascn #H-6 11 Oct 69 0930 EST Double		Ascn #H-7 11 Oct 69 1000 EST Double		Ascn #H-8 11 Oct 69 1030 EST Double		Ascn #H-9 11 Oct 69 1100 EST Combined		Ascn #H-1 13 Oct 69 0700 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	Sfc
50	133.5	2.0	143.9	0.8	----	---	139.3	1.3	176.7	1.6	182.8	3.0	217.4	1.2	190.7	1.9	50
100	141.7	3.6	143.9	1.7	----	---	140.7	2.5	176.7	3.3	183.2	5.5	217.4	2.4	182.7	3.2	100
150	162.3	4.4	165.0	2.9	----	---	149.5	2.8	176.2	3.9	185.6	5.3	217.5	3.3	178.5	4.4	150
200	173.5	5.5	180.0	4.1	156.9	8.5	156.3	3.1	175.7	4.3	186.3	5.3	217.9	3.9	180.1	5.7	200
250	185.5	5.9	192.4	5.6	190.4	7.0	161.8	3.3	167.3	4.9	184.6	5.5	219.6	4.0	177.6	7.0	250
300	197.7	6.7	202.1	7.6	199.1	7.8	176.5	4.3	160.5	5.5	184.1	5.0	220.8	4.0	171.7	8.2	300
350	204.6	8.4	203.7	8.7	205.2	7.6	186.7	5.6	158.9	6.0	187.3	3.4	218.4	3.9	169.4	9.2	350
400	206.8	9.6	207.2	10.0	212.6	8.8	198.7	7.4	161.1	5.8	189.9	3.6	215.4	3.8	169.6	9.9	400
450	211.9	10.9	212.6	11.0	217.5	10.1	208.0	8.0	169.6	5.0	193.8	3.9	208.6	4.0	176.8	11.0	450
500	217.3	12.0	219.9	11.7	220.9	11.3	211.2	8.5	181.1	4.5	197.6	4.4	202.5	4.2	188.0	9.5	500
550	222.7	12.5	227.8	11.7	226.1	11.5	213.2	9.0	191.6	5.0	203.5	5.3	196.3	4.3	197.6	8.6	550
600	229.5	12.4	228.6	12.8	229.9	10.5	218.0	9.6	199.9	5.7	218.3	5.6	190.3	4.4	201.2	9.1	600
650	233.8	11.7	234.3	10.2	230.8	9.5	224.5	10.1	217.9	7.0	229.4	6.6	194.4	4.7	212.0	8.8	650
700	234.2	10.8	230.8	8.6	229.8	8.9	231.5	10.4	229.8	8.9	231.9	8.2	198.8	5.0	218.7	7.7	700
750	230.1	9.9	223.1	7.8	229.2	8.9	242.8	8.7	234.6	9.5	233.3	8.8	203.7	5.9	216.7	8.1	750
800	227.1	9.4	223.4	6.8	228.7	9.4	238.1	8.9	237.1	9.7	234.2	8.9	207.3	6.9	213.7	9.3	800
850	222.9	8.8	219.5	7.9	228.7	9.1	236.1	8.9	237.7	9.6	228.8	8.9	221.3	8.7	225.1	6.7	850
900	216.0	8.1	220.0	8.1	227.4	9.0	236.0	8.8	237.6	9.2	226.1	9.3	232.2	11.0	231.1	7.2	900
950	212.5	8.1	220.2	8.3	225.2	9.0	233.3	9.5	235.7	9.4	225.5	9.9	232.8	12.6	228.0	7.9	950
1000	207.7	8.0	219.5	8.5	223.6	9.1	234.0	9.1	235.0	8.9	241.9	6.8	233.3	14.1			1000
1050	203.1	7.8	220.9	7.4	224.9	9.3	232.5	9.8	233.3	9.0	230.5	9.3	233.7	14.9			1050
1100	202.9	7.5	217.3	8.0	224.1	9.5	229.4	11.6	230.5	10.1	223.6	12.3					1100
1150	203.8	7.0	216.7	8.7	226.0	9.1	228.5	10.8	230.2	10.1	223.0	12.7					1150
1200	204.4	6.9	216.7	8.8	226.8	9.2	227.6	9.3	231.5	9.1	228.8	10.0					1200
1250	204.4	7.5	216.5	6.4	225.1	10.0	226.9	8.7	228.2	9.5	230.2	10.3					1250
1300	204.5	8.0	215.2	8.6	226.0	10.2	227.9	9.6	228.1	9.2	234.7	9.3					1300
1350	207.0	7.4					227.3	10.6	228.9	9.1	234.0	10.0					1350
1400							227.6	11.2	229.8	9.2	234.3	10.4					1400
1450							229.9	11.1	230.9	9.1	235.9	10.1					1450

Table 9 (continued). PILOT-BALLOON MEASUREMENTS

	Ascn #H-2 13 Oct 69 0730 EST Double		Ascn #H-3 13 Oct 69 0800 EST Double		Ascn #H-4 13 Oct 69 0830 EST Double		Ascn #H-5 13 Oct 69 0900 EST Double		Ascn #H-6 13 Oct 69 0930 EST Double		Ascn #H-7 13 Oct 69 1000 EST Double		Ascn #H-8 13 Oct 69 1030 EST Double		Ascn #H-9 13 Oct 69 1100 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0		0.0	120.0	1.3	150.0	2.2	180.0	2.2	Sfc
50	178.7	1.2	164.0	1.7	182.6	1.9	175.5	2.5	169.6	1.6	157.4	4.0	154.1	2.1	196.0	3.2	50
100	173.5	2.8	164.8	3.2	181.6	3.5	171.3	4.6	170.0	3.1	186.6	4.3	160.5	2.2	212.0	4.2	100
150	168.1	4.9	166.4	4.5	177.1	4.1	169.9	5.2	172.6	3.5	191.7	4.7	169.9	2.5	203.4	4.1	150
200	168.4	5.7	17[illegible].4	5.4	172.6	5.5	170.7	5.5	169.9	3.7	187.9	4.4	179.1	3.2	194.7	4.2	200
250	165.7	6.8	172.3	6.4	170.8	6.9	169.4	5.8	169.8	4.0	184.7	4.1	185.0	3.8	187.3	4.3	250
300	165.8	8.0	170.8	7.2	170.8	7.9	170.2	5.7	173.8	4.1	182.5	3.9	187.5	3.6	185.0	4.3	300
350	169.3	9.2	174.8	9.0	172.8	8.2	176.1	6.1	172.6	4.9	183.0	3.8	192.1	4.2	182.7	4.3	350
400	175.2	10.9	178.3	10.7	176.1	9.4	181.5	7.8	179.2	5.8	191.0	5.2	198.3	4.5	180.9	4.0	400
450	183.3	10.7	182.0	11.1	180.3	11.1	191.4	8.0	190.7	6.9	188.6	7.6	196.9	4.5	179.8	3.4	450
500	188.8	10.8	190.4	11.1	201.0	8.4	196.4	9.5	202.7	8.0	199.2	5.6	197.4	4.7	180.8	3.1	500
550	192.2	11.4	197.1	11.3	199.0	10.7	204.1	9.1	205.4	8.7	201.2	6.3	205.5	4.5	187.8	3.8	550
600	196.1	11.9	200.8	11.3	210.6	9.5	206.0	10.4	204.6	9.7	206.1	6.5	207.1	4.3	192.6	4.6	600
650	202.1	10.[illegible]	205.6	10.6	212.9	10.0	207.8	11.4	217.4	8.4	213.4	7.1	200.7	5.0	199.7	5.2	650
700	210.1	9.5	209.1	9.8	212.0	11.0	217.0	9.9	224.6	8.2	221.9	8.1	205.5	5.3	206.1	5.8	700
750	212.3	9.7	211.0	9.9	214.3	10.8	220.7	9.3	232.7	8.1	227.9	8.5	223.6	6.2	207.2	6.4	750
800	208.8	10.7	213.8	9.9	219.5	9.8	233.9	7.6	240.0	8.4	232.0	8.5	228.6	7.8	205.2	6.9	800
850	232.7	7.4	223.6	8.7	223.6	9.3	237.6	7.9	240.1	9.3	234.5	9.4	231.3	9.0	204.7	7.4	850
900	218.6	9.5	222.7	9.6	223.4	9.4			238.0	9.4	237.8	9.7	243.0	9.6	206.5	8.0	900
950	219.7	9.5	229.8	8.3	225.1	8.2			236.2	8.7	239.1	8.8	242.6	9.0	212.6	7.8	950
1000	225.1	8.8	232.6	7.7	225.4	7.8			233.7	8.0	233.9	9.0	240.8	8.5	224.4	7.2	1000
1050	221.8	9.8	221.9	9.5	225.5	8.1			227.7	8.7	228.7	10.0			228.2	8.4	1050
1100	242.2	7.0	228.2	8.3	225.1	8.4			224.4	9.7	228.1	10.0			227.8	8.6	1100
1150	238.5	7.1	228.4	8.5	222.7	8.5					226.0	9.7			226.9	8.9	1150
1200	230.0	8.0	226.2	8.8											225.9	9.0	1200
1250	225.6	8.6	231.7	6.7											224.6	8.6	1250
1300			221.5	9.0											223.7	9.8	1300
1350			220.6	9.4											224.3	10.5	1350
1400															225.5	10.7	1400
1450															225.9	10.5	1450
1500															225.2	11.0	1500

Table 9 (continued). PILOT-BALLOON MEASUREMENTS

	Ascn #H-10 13 Oct 69 1130 EST Double		Ascn #H-1 15 Oct 69 0700 EST Double		Ascn #H-2 15 Oct 69 0730 EST Double		Ascn #H-3 15 Oct 69 0800 EST Double		Ascn #H-4 15 Oct 69 0830 EST Double		Ascn #H-5 15 Oct 69 0900 EST Double		Ascn #H-6 15 Oct 69 0930 EST Double		Ascn #H-7 15 Oct 69 1000 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc	210.0	3.5		0.0		0.0		0.0		0.0		0.0		0.0		0.0	Sfc
50	208.5	6.0	065.1	0.8	031.9	0.9	054.4	0.9	058.1	0.9	085.1	1.2	041.6	0.8	038.3	1.7	50
100	208.0	7.6	083.1	1.2	058.7	1.0	064.8	0.9	056.0	1.4	072.8	1.8	041.6	1.6	043.8	2.8	100
150	209.0	7.5	090.0	1.2	070.1	1.3	078.0	1.5	064.1	1.8	068.4	2.4	043.2	2.2	056.9	2.3	150
200	207.2	6.6	356.3	2.0	041.9	1.7	070.1	1.9	063.5	2.4	065.7	3.0	048.3	2.1	057.2	2.5	200
250	204.8	5.8	356.3	2.5	007.3	2.6	037.4	2.1	040.7	2.9	052.6	3.3	053.1	2.0	057.2	2.5	250
300	204.2	5.4	356.3	3.0	359.3	3.6	011.9	3.1	021.8	3.7	033.4	3.6	054.6	1.9	057.5	2.6	300
350	208.0	5.4	007.9	3.2	003.4	3.2	007.5	3.4	013.1	3.9	026.4	3.8	056.4	1.9	060.1	2.2	350
400	210.3	5.8	023.9	4.1	024.7	3.8	020.0	3.5	023.9	3.9	033.8	4.2	058.2	2.8	059.9	2.6	400
450	214.3	5.4	033.2	5.1	036.4	4.7	032.3	4.0	031.8	4.3	042.7	4.6	056.9	3.3	072.4	3.1	450
500	223.9	5.6	037.9	5.6	040.1	5.3	036.5	4.7	039.3	5.0	050.0	4.8	056.0	3.5	068.3	3.5	500
550	231.0	5.5	038.7	5.7	039.4	5.4	039.3	4.8	045.2	5.0	055.3	5.0	059.9	3.9	066.3	3.9	550
600	229.4	4.8	034.8	5.5	036.9	5.3	039.8	4.9	044.3	5.0	057.4	5.1	067.4	4.6	065.7	4.6	600
650	223.3	4.4	031.4	6.0	035.7	5.6	039.6	5.1	043.3	5.2	056.0	4.8	065.2	4.9	056.0	4.2	650
700	222.6	4.3	025.0	6.3	032.7	6.0	038.8	5.2	043.8	5.3	053.4	4.9	059.6	4.9	055.1	3.9	700
750	222.6	4.2	019.5	6.1	026.3	6.3	035.4	5.3	042.9	5.0	045.4	5.2	051.1	5.1	050.6	3.8	750
800	217.3	4.7	015.3	6.1	021.5	6.5	027.4	5.2	036.6	5.0	033.8	5.3	040.2	5.1	044.2	3.9	800
850	218.7	5.9	012.8	6.5	018.3	6.5	025.3	6.0	029.4	5.9	024.8	5.5	033.7	5.3	041.5	4.1	850
900	220.6	4.8	009.9	7.0	015.0	6.7	019.3	6.4	022.7	6.4	026.7	5.8	038.1	5.5	037.4	4.6	900
950	218.4	5.7	001.4	7.8	008.9	7.7	006.8	6.9	020.0	6.1	030.4	5.3	045.9	5.0	039.0	4.9	950
1000	219.3	6.6	352.5	7.9	002.8	8.7	010.1	8.2	016.8	5.0	027.9	4.1	028.5	2.9			1000
1050	223.9	6.9	353.6	8.1	353.4	7.0	008.3	7.9	015.6	4.4	022.6	3.6	044.6	3.7			1050
1100	227.5	8.4	350.7	7.8	355.4	6.8	359.0	6.1	018.2	4.6	029.3	5.0	041.5	4.0			1100
1150	223.9	10.4	347.6	7.4	359.6	7.2					021.8	4.3	040.5	3.8			1150
1200													043.8	4.0			1200
1250													047.6	5.0			1250
1300													022.3	3.0			1300

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #H-8 15 Oct 69 1030 EST Double		Ascn #H-9 15 Oct 69 1100 EST Double		Ascn #H-10 15 Oct 69 1130 EST Double		Ascn #H-11 15 Oct 69 1200 EST Double		Ascn #H-1 17 Oct 69 0700 EST Double		Ascn #H-2 17 Oct 69 1030 EST Double		Ascn #H-3 17 Oct 69 1100 EST Double		Ascn #H-1 18 Oct 69 0700 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0	200.0	4.4	220.0	5.3	230.0	5.3		0.0	Sfc
50	142.1	1.2	110.2	1.3	044.4	0.8	089.1	2.2	241.7	6.3	233.5	7.3	234.1	6.0	215.5	2.5	50
100	139.2	2.0	110.0	2.6	044.4	1.6	094.4	2.2	269.5	8.2	247.0	9.2	238.2	6.7	218.9	4.6	100
150	124.6	1.8	105.8	2.3	048.3	1.8	064.8	1.5	266.1	10.4	251.3	10.9	242.3	7.5	223.0	6.3	150
200	114.2	1.4	103.0	2.3	052.4	2.0	061.7	2.1	268.5	10.7	247.0	12.2	246.4	8.2	235.1	8.2	200
250	097.6	0.9	100.1	2.3	057.0	2.1	050.8	2.1	270.0	11.2	250.0	13.4	250.6	8.9	241.0	10.6	250
300	054.1	1.2	077.1	1.7	064.0	2.1	059.5	1.5	270.3	11.8	254.9	14.4	252.2	9.5	247.6	12.0	300
350	033.6	1.9	072.3	2.1	070.6	2.2	011.8	1.3	270.4	11.9	258.0	15.2	252.4	10.0	256.9	12.4	350
400	025.3	2.6	074.9	2.8	076.8	2.3	019.6	1.5	270.1	10.9	260.9	13.9	252.7	10.5	265.5	12.7	400
450	024.1	2.3	066.8	2.9	082.5	2.4	036.2	1.1	270.9	10.7	259.5	14.4	253.5	10.9	273.4	12.3	450
500	022.6	2.1	071.4	2.7	087.6	2.5	071.5	2.1	270.5	11.8	259.7	13.6	254.2	11.2	281.5	11.4	500
550	026.2	1.9	077.9	2.5	092.2	2.7	074.9	2.8	272.1	10.0	257.4	14.0	254.9	11.6	286.0	10.5	550
600	038.0	1.8	075.0	2.5	096.2	2.9	072.1	3.1	271.1	10.4	257.3	13.5	255.6	11.9	278.6	10.3	600
650	046.1	1.9	071.0	2.5	099.8	3.1	073.7	3.4	270.8	11.1	257.0	13.5	256.7	12.2			650
700	042.7	2.3	062.1	2.4	095.5	3.2	079.6	3.4	273.0	10.8	256.4	13.9	259.8	12.2			700
750	047.7	2.5	060.2	2.6	090.0	3.3	085.4	3.6	272.8	12.0	255.4	14.8	263.0	12.1			750
800	049.6	3.2	070.7	3.6	092.7	2.8	087.0	4.5	272.4	13.3	254.7	15.4	266.8	12.4			800
850	048.4	4.4	052.6	3.5	098.8	2.2	082.4	3.3	276.6	12.1	255.0	14.0	269.9	13.1			850
900	046.0	4.9	046.7	3.2	061.8	2.7			277.0	11.4	255.5	14.2	269.9	13.7			900
950	047.4	4.6	056.2	3.1	055.9	3.0			273.7	12.3	256.1	15.8	269.6	14.3			950
1000	050.1	3.8	064.8	2.9	063.5	3.0			272.8	15.8	256.9	14.0					1000
1050	047.7	2.8	065.4	2.9	063.9	3.5			272.2	17.1	258.2	11.3					1050
1100	052.8	3.1	053.5	3.3	056.5	3.5			271.5	15.5	259.1	12.6					1100
1150	049.3	3.4	042.0	3.5	055.9	3.6			270.1	15.7	258.9	13.6					1150
1200	045.5	3.6	047.7	3.6	064.4	3.8			268.7	16.2	258.2	14.4					1200
1250	052.8	3.7	049.9	4.2	065.0	4.1			267.5	16.7	258.1	15.4					1250
1300	049.8	4.4	037.8	4.5	057.7	3.9			265.8	16.8	258.1	16.4					1300
1350	041.2	4.6	032.9	4.4	045.3	3.4			264.0	16.9	259.8	13.0					1350
1400	029.7	4.5			045.5	3.2			263.7	19.7							1400
1450	024.0	4.2			045.0	2.9											1450
1500	027.5	4.2			055.9	2.3											1500

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #H-2 18 Oct 69 0730 EST Double		Ascn #H-3 18 Oct 69 0800 EST Double		Ascn #H-4 18 Oct 69 0830 EST Double		Ascn #H-5 18 Oct 69 0900 EST Double		Ascn #H-6 18 Oct 69 0930 EST Double		Ascn #H-7 18 Oct 69 1000 EST Double		Ascn #H-8 18 Oct 69 1030 EST Double		Ascn #H-1 20 Oct 69 0700 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0	250.0	3.1	260.0	2.6	260.0	2.2	230.0	2.2	Sfc
50	218.6	2.8	223.4	3.3	224.7	3.1	231.2	3.3	240.3	5.3	248.6	3.8	252.2	5.5	223.9	5.1	50
100	224.0	4.9	227.8	5.4	226.8	5.6	227.6	5.6	231.3	7.2	237.3	5.0	246.6	6.7	219.6	7.9	100
150	231.0	6.7	233.2	7.3	233.7	6.2	216.9	5.8	225.1	8.3	233.1	6.3	233.0	7.0	222.7	9.6	150
200	237.9	9.2	237.5	9.1	234.3	7.0	225.6	5.5	228.7	7.7	234.6	7.4	244.4	7.5	223.9	11.4	200
250	246.4	11.6	242.1	10.4	242.5	8.3	234.3	6.9	226.5	6.2	235.7	7.4	242.8	8.0	223.3	13.3	250
300	255.6	12.3	250.9	11.8	252.4	9.9	242.9	8.3	233.6	6.6	236.7	6.9	242.8	7.6	224.0	14.7	300
350	263.9	12.7	260.8	13.0	260.4	11.4	251.6	9.7	241.0	6.8	238.9	6.6	246.9	6.4	228.6	15.0	350
400	271.1	12.7	269.3	13.3	269.4	11.6	260.3	10.2	252.6	8.3	240.7	7.4	249.4	7.7	231.0	16.2	400
450	279.0	11.9	278.6	11.9	277.4	11.1	269.7	10.7	257.8	10.5	245.2	8.1	244.9	9.0	243.3	16.8	450
500	280.6	11.2	282.2	11.2	282.5	10.3	270.3	10.7	257.7	11.4	254.4	8.5	248.3	9.5	247.3	18.0	500
550	277.3	10.8	276.7	12.7	278.1	10.5	268.0	10.5	256.8	10.9	254.3	9.4	254.6	9.8	246.3	19.2	550
600	272.8	10.7	276.1	11.5	277.3	9.1	267.0	9.7	255.6	11.0	255.3	10.4	255.8	10.5	248.1	21.1	600
650	269.8	11.1	274.6	10.2	272.3	9.6	264.1	10.7	254.5	12.0	257.1	11.5	257.2	10.2	250.5	23.2	650
700	274.2	9.7	271.2	11.1	269.3	10.2	264.0	10.6	256.0	11.7			258.0	8.7	253.8	23.6	700
750	274.2	10.0	268.4	13.8	270.4	8.9	263.2	10.6	260.0	10.0			255.6	9.4	257.1	23.0	750
800	275.4	9.7	276.9	8.6	270.4	9.8	262.2	10.7	258.7	10.4			255.1	10.4	257.8	20.7	800
850	276.0	9.5	273.8	10.1	271.4	10.2	264.5	9.6	256.0	11.4			256.1	11.7	255.6	22.2	850
900	272.1	10.8	271.4	12.4	271.4	10.0	263.4	12.4	254.9	11.9			257.9	12.0	255.4	20.8	900
950	271.5	11.5	271.3	11.9	271.1	9.1	266.8	10.3	257.0	10.8			260.3	11.8	252.3	23.4	950
1000	271.7	10.8	271.1	9.9			267.1	10.6	261.3	10.3			264.8	11.8			1000
1050	272.7	9.5	269.3	10.4			270.5	10.3	259.7	14.2			267.9	12.0			1050
1100	272.3	11.3	269.9	11.9			273.5	12.2	267.8	11.5			269.7	12.4			1100
1150	271.8	14.7	272.2	12.8			273.4	15.2					272.6	12.2			1150
1200	273.5	16.4					274.0	17.5					275.0	12.5			1200
1250	277.0	15.0					278.8	17.8					275.9	13.9			1250
1300													275.4	16.9			1300
1350													275.0	20.0			1350

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #H-2 20 Oct 69 0730 EST Double		Ascn #H-3 20 Oct 69 0800 EST Double		Ascn #H-4 20 Oct 69 0830 EST Double		Ascn #H-1 21 Oct 31 0800 EST Combined		Ascn #H-2 21 Oct 69 0830 EST Double		Ascn #H-3 21 Oct 69 0900 EST Combined		Ascn #H-4 21 Oct 69 0930 EST Combined		Ascn #H-5 21 Oct 69 1000 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc	240.0	4.0	230.0	4.4		0.0	260.0	4.4	290.0	3.5	200.0	4.4	210.0	5.3	310.0	6.2	Sfc
50	229.7	5.6	228.3	7.6	235.4	4.0	255.4	5.7	270.0	8.7	237.7	6.1	239.5	6.9	296.2	8.1	50
100	219.4	7.3	228.6	10.4	235.4	8.0	251.2	6.8	262.4	10.7	262.7	7.2	257.9	8.3	282.5	10.0	100
150	216.6	8.7	232.6	12.4	235.5	10.2	248.7	7.5	261.2	11.3	262.0	7.4	259.1	9.9	272.2	11.7	150
200	216.3	10.1	233.5	12.9	235.5	12.1	251.3	8.6	262.9	10.7	256.3	7.8	256.7	9.5	264.6	12.1	200
250	218.7	11.7	232.4	13.3	235.5	14.6	259.5	10.3	264.6	10.4	250.7	8.3	256.5	8.9	263.4	13.1	250
300	223.9	13.7	225.6	13.3	235.2	14.6	262.1	11.7	265.7	10.6	248.3	8.5	264.7	7.5	264.0	13.6	300
350	227.6	15.2	222.9	12.8	233.9	14.5	262.8	12.6	266.5	10.9	248.2	8.7	276.9	5.3	267.0	12.4	350
400	231.0	16.5	229.7	11.4	232.2	15.2	263.6	13.1	266.2	11.6	256.7	9.1			269.7	11.4	400
450	234.5	18.2	229.4	14.9	233.9	15.9	265.6	14.4	264.8	12.3	262.0	9.5			266.4	11.9	450
500	239.2	19.1	229.3	18.5	238.0	16.8	267.4	14.3	262.6	13.0	262.3	9.6			264.0	12.4	500
550	246.1	19.4			240.2	18.6	270.6	13.4	262.0	13.5	262.5	9.6			263.5	13.1	550
600					242.3	20.4	275.4	13.2			263.3	9.9			263.6	13.8	600
650					248.2	20.9	279.8	13.4			264.2	10.4			264.7	14.7	650
700					252.1	21.2	283.0	13.7			264.7	10.4			268.9	16.0	700
750							284.5	13.9			264.7	10.0			272.0	16.9	750
800							284.9	14.2							271.4	16.7	800
850							284.8	14.5							269.5	14.9	850
900							284.9	14.9							270.2	15.8	900
950							285.6	15.2									950
1000							288.7	14.7									1000

Table 9 (continued). PILOT BALLOON MEASUREMENTS

Z(m)	Ascn #H-6 21 Oct 69 1030 EST Double		Ascn #H-1 23 Oct 69 0700 EST Double		Ascn #H-2 23 Oct 69 0730 EST Double		Ascn #H-1 24 Oct 69 0700 EST Double		Ascn #H-2 24 Oct 69 0730 EST Single		Ascn #H-3 24 Oct 69 0800 EST Single		Ascn #H-4 24 Oct 69 0830 EST Single		Ascn #H-5 24 Oct 69 0900 EST Double		Z(m)
	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	
Sfc	300.0	7.1	350.0	0.4	345.0	0.8		0.0		0.0		0.0		0.0	135.0	0.4	Sfc
50	282.8	9.5	298.6	1.8	316.2	1.9	094.7	0.9	094.3	1.1	128.2	1.1	120.4	1.1	117.6	1.7	50
100	268.2	11.8	293.9	3.2	296.4	3.2	117.0	2.1	094.3	2.2	128.2	2.3	120.4	2.2	114.8	2.4	100
150	269.9	13.7	304.2	4.6	309.3	5.5	132.2	3.6	096.3	3.3	129.7	3.4	120.9	3.3	126.9	2.4	150
200	267.8	14.5	313.0	6.2	317.9	6.8	133.6	4.5	118.8	3.9	147.8	4.0	126.2	4.3	131.8	2.7	200
250	268.0	14.3	318.4	7.6	325.6	7.4	130.0	5.1	118.4	5.4	146.3	4.9	132.7	4.8	145.5	3.4	250
300	267.8	14.4	322.5	8.4	330.7	7.3	120.1	5.3	113.1	6.7	139.3	5.7	138.4	5.0	152.6	4.4	300
350	267.3	14.5	327.1	8.0	335.3	7.1	111.1	4.8	110.6	6.6	134.1	5.7	140.2	4.7	156.7	4.9	350
400	267.0	14.4	329.4	7.8	340.5	6.9	102.8	4.1	108.6	7.1	130.1	5.9	143.3	4.1	161.0	4.7	400
450	267.9	14.7	332.8	7.6	344.8	6.9	097.4	3.8	104.7	7.2	129.2	6.1	144.2	3.8	162.3	4.4	450
500	268.8	14.9	338.5	7.4	348.0	7.0	098.5	5.0	099.2	6.7	131.2	6.1	141.7	3.8	160.4	3.9	500
550	269.9	15.1	345.8	7.2	350.7	7.3	097.3	4.2	098.1	6.3	135.5	5.5	135.2	3.4	158.3	3.4	550
600	270.9	15.2	351.0	7.3	352.4	7.5	102.9	3.2	097.3	4.9	135.1	4.7	143.1	2.7	161.2	2.6	600
650	272.5	14.4	349.0	8.2	352.0	7.8	123.7	2.2	106.1	2.9	138.1	3.3	182.1	2.1	205.9	1.4	650
700	274.3	13.5	348.7	8.7	353.1	7.8	248.6	2.6	154.7	0.8	161.3	1.6	220.9	2.8	223.1	2.7	700
750	275.7	12.8	348.0	8.7	354.0	7.8	270.9	3.4	269.7	1.9			234.4	3.3	237.0	3.3	750
800	276.5	12.5	346.5	8.2	352.5	8.3	273.8	3.7	268.7	3.9			240.3	2.8	242.8	3.1	800
850			346.6	7.8	348.3	8.5	269.9	3.7	274.4	4.2			247.4	2.7	245.5	2.6	850
900			346.5	8.6	348.4	8.1	264.3	3.6	274.9	4.1			246.8	3.5	251.1	2.5	900
950			344.4	10.5	345.8	9.9	289.5	4.8	268.5	4.1			251.6	3.9	260.3	3.2	950
1000			343.7	9.3	343.9	10.0	299.2	4.7	262.5	4.5			271.4	3.5	289.3	3.0	1000
1050			342.6	8.4	340.4	9.5	303.4	5.0	280.7	4.1			287.2	3.6	299.9	2.6	1050
1100			340.2	9.0	337.0	7.9	307.0	5.3	292.6	4.2					315.4	2.8	1100
1150			337.7	10.6	335.1	8.3			300.2	4.5					327.4	2.4	1150
1200			331.5	6.7	334.3	10.3			306.3	4.7					328.6	3.6	1200
1250			333.4	10.7	333.6	11.4			314.6	4.4							1250
1300									323.7	4.4							1300

Table 9 (continued). PILOT-BALLOON MEASUREMENTS

	Ascn #H-6 24 Oct 69 0930 EST Double		Ascn #H-7 24 Oct 69 1000 EST Single		Ascn #H-8 24 Oct 69 1030 EST Double		Ascn #H-9 24 Oct 69 1100 EST Double		Ascn #K-1 28 Oct 69 0730 EST Double		Ascn #K-2 28 Oct 69 0800 EST Double		Ascn #K-3 28 Oct 69 0830 EST Double		Ascn #K-4 28 Oct 69 0900 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc	170.0	0.4	185.0	0.4	230.0	0.4	200.0	0.8		0.0		0.0		0.0		0.0	Sfc
50	143.7	1.0	221.5	1.5	201.9	1.4	182.0	1.9	219.7	0.7	211.6	0.7	227.9	0.4	188.5	0.5	50
100	122.3	1.5	258.1	2.6	176.1	2.3	166.2	2.8	236.1	1.7	244.3	1.6	261.6	1.3	256.9	1.0	100
150	135.8	2.1	292.0	3.5	173.3	2.2	168.4	2.2	253.1	3.1	265.3	3.4	277.3	2.9	285.0	2.5	150
200	151.7	2.0	293.9	1.4	172.5	2.1	163.6	1.5	270.8	5.2	275.0	5.3	288.3	4.4	288.7	3.3	200
250	152.4	3.0	156.2	0.7	174.2	1.9	177.8	1.5	281.2	5.7	285.2	6.0	301.8	5.9	302.3	4.5	250
300	153.2	4.1	146.6	2.5	199.0	1.8	195.3	1.6	291.9	6.4	304.9	6.8	315.1	7.3	320.8	6.7	300
350	156.4	4.7	154.8	3.1	218.4	1.8	209.7	1.7	302.2	6.6	314.0	7.2	325.4	8.0	331.5	7.2	350
400	161.7	4.9	167.6	3.3	218.5	2.0	196.0	2.8	314.4	6.2	320.8	7.5	330.8	8.3	338.9	7.1	400
450	173.5	4.3	178.4	3.2	210.9	2.7	206.6	3.2	318.7	7.4	326.4	7.8	333.6	8.2	340.0	7.2	450
500	182.7	3.5	187.6	3.0	202.8	3.4	217.5	3.9	331.9	5.5	329.9	8.3	338.6	7.7	340.3	7.2	500
550	182.7	2.9	194.0	2.9	200.8	3.6	219.8	4.8	331.9	6.2	331.0	8.6	341.3	7.5	341.0	6.6	550
600	178.4	2.6	210.9	2.8	203.7	4.0	219.7	4.4	331.8	6.4	332.6	8.2	338.9	7.6	339.1	6.0	600
650	193.9	2.4	219.8	2.7	212.2	3.9	221.5	3.6	332.8	6.0	333.8	7.5	335.2	7.2	332.0	5.9	650
700	228.1	3.1	225.7	2.2	224.2	3.9	207.7	2.8	332.5	5.7	332.1	7.0	329.2	7.3	324.5	6.3	700
750	239.1	2.9	236.9	1.9	228.0	4.1	207.0	2.8	332.6	5.2	330.4	6.0	326.1	6.9	323.2	7.0	750
800	243.0	2.1	237.7	2.4	228.1	3.8	213.6	2.9	327.8	4.9	324.0	5.9	321.9	6.2			800
850	274.7	2.1	252.3	2.3	232.5	3.2	230.5	3.4			320.3	5.6	317.5	5.9			850
900	263.7	2.7	267.1	2.0	245.1	3.0	236.6	3.6			315.7	5.5	314.9	5.8			900
950	275.9	2.6	279.5	1.7	255.4	2.6	240.9	2.5			312.3	6.2	312.9	4.9			950
1000	299.1	2.5	287.1	1.4	261.8	2.1	238.1	1.7			309.7	6.4	314.6	6.5			1000
1050	316.9	2.5	302.7	1.2	261.1	1.6	261.7	1.2			307.2	5.2	313.7	5.6			1050
1100	323.4	2.3	318.2	1.7	264.6	1.0	295.1	1.2			306.5	5.4					1100
1150	332.4	1.9	323.6	2.4	285.6	1.3	308.7	1.3			305.9	6.6					1150
1200	340.7	3.3	327.3	2.7	300.6	1.8	307.7	1.8									1200
1250			332.8	2.8	313.1	1.8	312.1	1.4									1250
1300			340.7	2.7													1300

Table 9 (continued). PILOT-BALLOON MEASUREMENTS

	Ascn #K-5 28 Oct 69 0930 EST Combined		Ascn #K-6 28 Oct 69 1000 EST Double		Ascn #K-7 28 Oct 69 1030 EST Combined		Ascn #K-8 28 Oct 69 1100 EST Double		Ascn #K-9 28 Oct 69 1130 EST Double		Ascn #K-1 29 Oct 69 0800 EST Combined		Ascn #K-2 29 Oct 69 0830 EST Combined		Ascn #K-3 29 Oct 69 0900 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	Sfc
50	191.9	0.8	292.8	2.8	316.2	4.0	295.9	1.3	326.2	3.8	071.2	0.7	144.8	0.1	043.6	0.5	50
100	207.9	0.7	301.2	2.8	315.7	4.5	295.9	2.6	334.2	3.4	066.8	1.9	072.9	1.3	065.9	1.9	100
150	308.9	0.7	310.7	2.4	312.2	4.8	326.0	3.0	338.7	2.8	069.6	3.6	075.3	3.5	074.8	4.1	150
200	312.3	1.4	315.5	2.1	308.3	5.1	341.5	3.7	333.5	3.7	079.0	5.8	080.4	5.8	080.8	5.7	200
250	295.3	2.3	323.4	3.1	303.8	5.1	341.9	3.7	336.4	4.8	083.8	8.0	085.1	7.7	088.8	6.7	250
300	306.8	3.9	326.9	4.0	307.4	4.5	333.0	3.4	336.6	5.1	087.4	8.9	090.4	7.5	095.2	7.5	300
350	316.7	5.1	323.3	4.2	315.1	3.9	323.5	3.2	335.0	5.0	088.9	8.4	091.0	8.7	095.9	8.5	350
400	323.9	6.2	327.7	4.2	319.5	4.1	321.4	3.4	333.4	4.8	084.7	6.7	090.8	10.0	090.9	8.3	400
450	330.7	6.9	332.1	4.8	316.6	4.7	317.3	3.3	329.5	2.9	078.4	6.6	088.6	8.8	085.7	7.8	450
500	337.7	7.1	333.4	5.8	315.2	5.1	304.4	2.5	324.8	4.0			082.8	6.3	084.1	7.0	500
550	340.6	7.4			323.8	5.4	299.6	2.5	322.4	4.4			081.1	6.7	082.3	5.0	550
600	339.5	7.2			325.6	6.2	303.5	2.9	319.5	4.3			086.6	6.1	083.2	5.7	600
650	334.8	7.3			326.2	6.9	307.1	3.5	313.7	5.2			087.2	5.9	083.1	6.4	650
700					328.5	6.4	309.8	4.2	315.7	6.3			083.5	6.0	079.8	6.2	700
750					329.5	6.3	311.7	4.8	317.1	6.4			079.8	5.8	075.1	6.0	750
800					328.3	6.5	313.2	5.5	318.1	6.0			079.6	6.5	077.4	7.0	800
850							314.3	6.2	315.9	5.5			078.7	6.3	079.8	6.2	850
900							317.6	6.3	312.4	6.5			081.3	6.0	079.2	6.9	900
950							326.7	5.5	320.1	7.2			084.9	6.0	076.0	6.1	950
1000							326.8	5.9	321.9	7.2			085.3	6.2	073.2	5.3	1000
1050							324.9	6.1	321.4	7.0			081.4	5.9	074.0	5.5	1050
1100							321.6	6.2					080.8	5.8	074.6	5.4	1100
1150															077.1	8.0	1150
1200															078.4	10.7	1200
1250															079.9	6.2	1250

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #K-4 29 Oct 69 0930 EST Double		Ascn #K-5 29 Oct 69 1000 EST Double		Ascn #K-6 29 Oct 69 1030 EST Double		Ascn #K-7 29 Oct 69 1100 EST Double		Ascn #K-1 30 Oct 69 0800 EST Double		Ascn #K-2 30 Oct 69 0830 EST Double		Ascn #K-1 31 Oct 69 0730 EST Double		Ascn #K-2 31 Oct 69 0800 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	Sfc
50	083.7	1.5	094.0	1.4	044.1	1.3	087.4	0.9	047.7	0.7	084.6	0.9	084.7	0.9	098.3	1.0	50
100	085.3	2.2	091.8	2.5	041.6	1.8	080.4	1.6	070.6	1.7	072.4	1.9	111.0	2.3	113.6	2.6	100
150	082.2	2.4	078.1	2.2	036.3	1.6	054.3	1.6	086.1	3.5	080.4	3.4	122.9	4.4	124.6	4.4	150
200	084.5	3.7	063.8	2.1	085.1	0.6	033.7	1.8	096.6	6.1	095.0	5.9	132.5	6.3	136.3	5.5	200
250	089.0	5.5	065.4	2.1	096.2	1.0	046.8	1.8	105.5	6.8	108.0	6.4	140.5	7.8	142.2	7.4	250
300	091.2	6.6	088.9	2.8	076.5	2.2	060.3	1.9	114.8	7.1	120.0	6.0	149.8	8.6	147.8	8.8	300
350	093.6	7.7	095.9	3.8	080.6	3.7	075.2	2.2	138.0	5.7	130.1	5.0	157.5	8.4	158.6	9.2	350
400	095.2	8.9	099.7	4.8	087.6	4.7	069.8	2.3	140.0	5.6	134.4	4.1	166.3	8.6	163.5	11.0	400
450	094.6	8.3	094.5	5.9	090.2	5.6	063.5	2.4	146.8	5.6	143.1	4.2	174.7	9.0	167.0	12.9	450
500	091.2	6.3	087.3	6.0	090.4	6.3	071.2	3.0			156.2	5.0	181.5	9.7	170.4	14.3	500
550	089.6	5.8	082.2	5.3	089.4	6.6	078.4	3.5			155.7	7.7	186.0	9.4	173.4	15.5	550
600	088.5	6.6	077.6	4.9	081.8	5.6	085.9	5.5			160.7	9.2	192.6	8.2			600
650	086.3	7.1	070.9	5.2	083.0	6.6	079.8	5.9			158.2	11.2	202.2	7.2			650
700	080.9	6.8	072.5	5.5	085.7	8.1	073.2	6.4			157.6	13.0	204.5	8.6			700
750	078.5	7.1	080.5	6.5			075.7	4.7			157.6	14.8	212.2	8.2			750
800	072.1	5.9	086.3	6.7			081.3	5.6			166.7	9.7	228.5	7.7			800
850	072.9	4.1	087.5	5.9			077.6	5.4			171.6	7.7	237.3	7.9			850
900	081.1	6.0	081.8	6.2			077.0	6.0			175.4	6.9	222.0	9.4			900
950	082.8	7.2	079.8	6.6			080.0	6.1			179.5	6.8	218.9	9.9			950
1000	081.4	7.5	075.3	6.0			082.2	6.1			185.1	6.8	223.6	9.1			1000
1050	078.4	6.4	075.1	5.8			086.1	5.1			193.8	6.5	226.6	8.1			1050
1100	075.4	5.6	078.5	6.2			095.1	5.1			202.6	5.8	221.4	8.2			1100
1150	076.2	5.9					094.0	7.2			191.5	7.0	218.2	8.8			1150
1200	078.0	2.8					094.1	6.9			207.8	5.1	224.5	7.0			1200
1250	089.2	3.2					095.6	5.6			221.4	3.8					1250
1300	089.5	5.2															1300

Table 9 (continued). PILOT-BALLOON MEASUREMENTS

	Ascn #K-3 31 Oct 69 0830 EST Double		Ascn #K-4 31 Oct 69 0900 EST Double		Ascn #K-5 31 Oct 69 0930 EST Double		Ascn #K-6 31 Oct 69 1000 EST Double		Ascn #K-7 31 Oct 69 1030 EST Double		Ascn #K-8 31 Oct 69 1100 EST Double		Ascn #K-1 1 Nov 69 0805 EST Double		Ascn #H-1 6 Nov 69 0730 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc		0.0		0.0		0.0	120.0	0.9	130.0	0.0	170.0	3.1		0.0	300.0	0.4	Sfc
50	109.2	1.4	123.0	1.5	138.2	2.0	126.0	1.3	137.1	2.4	154.2	3.9	117.2	2.6	292.3	3.8	50
100	116.9	2.5	127.2	3.1	136.8	3.8	131.4	2.7	144.9	3.7	138.5	4.6	122.2	4.7	285.5	6.9	100
150	125.6	3.5	133.0	4.8	124.0	3.5	130.2	2.8	154.0	4.1	129.1	4.7	136.1	5.7	283.6	8.8	150
200	131.6	4.9	137.1	5.0	127.5	3.4	140.4	3.0	158.8	5.1	126.2	4.4	145.0	6.6	285.3	10.2	200
250	136.7	6.2	141.3	5.5	149.2	3.6	150.0	4.0	165.2	5.7	125.2	4.2	151.1	7.5	293.7	10.4	250
300	146.4	7.5	145.2	6.1	144.9	4.1	155.3	5.4	166.1	6.0	128.0	4.2	151.0	9.2	300.3	10.9	300
350	155.4	8.5	151.4	7.2	141.5	4.9	158.1	6.3	158.8	5.5	134.9	4.4	151.0	10.3	302.4	11.4	350
400	165.4	9.4	159.6	7.7	139.5	5.8	160.3	6.2	153.2	4.9	142.1	4.8	151.0	10.7	304.3	12.0	400
450	180.2	8.5	170.1	7.9	155.0	5.6	165.3	5.8	159.8	6.3	145.2	4.8	151.5	11.1	308.5	12.4	450
500	187.7	8.4	175.4	9.4	168.6	7.3	179.0	8.0	158.5	7.2	150.4	5.0	152.4	11.5	310.9	12.7	500
550	186.4	9.0	181.8	9.6	175.8	9.8	183.6	9.0	155.7	7.5	154.5	5.1	155.9	11.1	306.2	13.4	550
600	190.4	8.2	189.0	8.8	187.3	9.2	186.0	9.5	159.3	8.0	161.2	5.2	156.6	13.1	303.2	15.1	600
650	193.3	8.3	191.5	8.7	190.4	9.3	187.9	10.0	169.0	4.3	171.5	5.6	156.5	16.0	304.2	15.0	650
700	195.1	9.0	187.8	10.0	191.3	9.1	195.1	8.5	174.9	8.5	179.5	5.7	159.7	13.3			700
750	209.9	6.9	209.4	6.8	200.7	7.6	200.6	7.9	191.1	7.5	187.7	5.8	160.9	14.2			750
800	216.7	7.3	203.5	9.0	207.6	7.2	198.7	8.9	199.7	7.5	204.3	5.4	160.3	17.4			800
850	215.5	8.4	199.9	11.1	210.5	8.1	205.4	8.4	197.8	8.3	213.3	5.8	165.0	15.1			850
900	213.6	9.3	209.2	9.0	215.2	7.9	217.3	7.4	202.4	7.4	213.1	6.7					900
950	218.3	9.0	221.8	6.0	216.5	7.9	228.6	6.0	219.8	5.4	213.9	7.3					950
1000	222.2	8.7	207.4	8.7	216.3	7.7	226.0	6.1	223.8	5.0	215.0	7.8					1000
1050	215.0	9.7	204.3	8.8	233.9	5.2	222.0	6.4									1050
1100	230.9	4.8	209.6	5.5	221.9	6.2	220.4	6.5									1100
1150	209.4	7.4	197.5	7.4	209.1	7.0	211.4	8.3									1150
1200	200.1	9.0	192.2	6.8	201.9	2.4	209.2	7.2									1200
1250	192.3	8.2			191.3	4.9	206.3	7.0									1250
1300	188.7	8.9			186.3	6.6											1300
1350	191.1	12.3															1350

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn #H-2 6 Nov 69 0800 EST Double		Ascn #H-3 6 Nov 69 0830 EST Double		Ascn #H-4 6 Nov 69 0900 EST Double		Ascn #H-5 6 Nov 69 0930 EST Double		Ascn #H-6 6 Nov 69 1000 EST Double		Ascn #H-7 6 Nov 69 1030 EST Double		Ascn #H-8 6 Nov 69 1100 EST Double		Ascn #H-9 6 Nov 69 1130 EST Double		
Z(m)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	D(°)	S(mps)	Z(m)
Sfc	335.0	4.5	320.0	4.0	320.0	0.4	315.0	0.4	325.0	4.9	325.0	3.1	220.0	0.9	170.0	4.0	Sfc
50	320.5	5.0	306.5	5.0	309.9	4.4	315.5	4.9	312.2	7.9	320.1	5.5	287.4	4.4	261.2	5.6	50
100	306.0	5.6	300.0	6.1	302.5	8.0	315.8	8.6	303.6	10.5	312.1	6.7	325.3	6.5	331.4	7.5	100
150	299.7	11.3	302.6	7.5	302.9	8.9	313.8	9.7	308.1	12.8	302.5	7.3	325.3	7.3	329.3	9.7	150
200	296.7	10.7	303.4	9.5	301.0	8.9	311.2	10.9	307.8	12.9	293.9	8.3	323.8	8.2	323.4	9.3	200
250	295.4	10.7	303.3	12.0	297.8	8.5	309.0	11.7	307.2	13.0	299.2	8.5	320.3	9.1	319.6	9.4	250
300	295.8	11.3	299.8	11.8	294.0	8.2	310.2	12.2	307.1	13.4	307.9	8.7	318.8	9.6	318.2	10.0	300
350	302.3	12.5	297.0	11.7	288.9	8.8	312.7	11.6	305.5	12.8	310.2	9.4	318.4	9.7	316.6	10.6	350
400	301.9	13.0	301.3	11.7	284.4	9.4	314.7	11.4	307.4	11.6	311.6	10.2	318.1	10.4	315.2	11.2	400
450	301.7	13.7	305.7	11.8	287.2	10.5	316.4	11.7	313.1	10.4	310.6	10.8	318.5	11.4	313.9	11.9	450
500	306.7	15.6	309.8	11.8	292.1	11.9	318.0	12.3	311.9	11.4	306.7	10.9	320.4	12.0	318.8	9.1	500
550	309.2	15.3	313.9	11.7	296.0	13.3	319.8	13.0	311.5	11.9	302.9	11.1	320.1	14.0	326.2	7.3	550
600	309.3	15.6	316.9	12.8	303.5	14.2	324.0	13.6	311.8	11.9	302.5	11.3	320.9	12.3	331.6	7.6	600
650	307.9	16.5	319.0	13.9	309.9	15.2	322.6	14.9			302.0	11.4	322.7	12.4	330.9	8.1	650
700	309.7	16.1	316.5	15.6	314.6	16.1	319.6	16.5			304.7	11.5	323.1	13.5	324.5	8.7	700
750			314.4	17.0	317.5	15.7	320.4	16.9			309.6	11.7	322.7	12.9	320.0	9.3	750
800			312.3	18.0	318.2	14.9	323.1	16.7			314.4	11.9	321.5	11.9	317.6	9.7	800
850					316.9	14.8					320.0	11.7	320.2	12.1	316.0	10.3	850
900											324.6	11.8	318.9	12.4	316.6	11.2	900
950											324.3	13.4	317.4	12.7	316.0	11.7	950
1000											325.1	14.5			314.5	11.9	1000
1050											325.7	14.1			314.6	13.0	1050
1100											324.9	14.7			315.3	13.7	1100
1150											324.6	17.5					1150

RADIOSONDE MEASUREMENTS

Radiosonde observations taken at Jimmy Stewart Airport are presented in Table 10. On most experiment days, two releases were effected, one before and one after the airborne activities. In addition, a single early morning radiosonde was occasionally released on days during which the weather proved too restrictive for flying; these are also included in this table.

The pressure, temperature, dewpoint, and height above MSL of each mandatory and significant level up to 700 millibars are given for each radiosonde in Table 10. The accompanying rabal wind speeds and directions are listed for fixed heights; i.e., surface, 150 and 300 meters above surface, and 500, 1000, 1500, 2000, 2500, and 3000 meters MSL. Elevation of the release site is 428 meters MSL.

Table 10. RADIOSONDE MEASUREMENTS

Symbols

Ascn # : Individual ascension or radiosonde designation.
EST : Release time of radiosonde.
P (mb) : Mandatory and significant pressure levels in whole millibars.
Z (m) : Height of each level in whole meters above mean sea level.
T (°C) : Dry-bulb temperature to nearest tenth degree Centigrade.
Td (°C) : Dewpoint temperature to nearest tenth degree Centigrade.
H (m) : Surface and 150 and 300 meters above surface in whole meters. Remaining heights in whole meters above mean sea level.
D (°) : Wind direction in whole degrees of azimuth.
S (mps) : Wind speed to nearest tenth meter per second.
Sfc : Surface wind direction and speed from Aerovane.
--- : Missing data.

Table 10. RADIOSONDE MEASUREMENTS

Ascn #1 13 October 1967 0539 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	267					
980	428	- 2.6	- 2.7	Sfc		0.0
960	593	4.9	0.6			
950	678	4.4	2.9			
907	1053	2.2	- 5.6			
900	1116	1.7	- 6.1			
850	1573	- 2.6	- 7.9			
842	1647	- 3.3	- 8.2			
807	1987	2.3	-19.0			
800	2057	2.0	-19.2			
750	2575	0.0	-22.2			
700	3125	- 2.6	-25.0			

Ascn #2 20 October 1967 1107 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	195					
972	428	8.9	0.8	Sfc	060	2.1
950	616	6.7	- 2.7	150	232	3.2
928	807	4.3	- 6.3	300	221	3.9
904	1019	2.2	- 6.9			
900	1055	1.8	- 6.5	500	157	2.6
884	1199	0.0	- 6.2	1000	229	5.7
878	1253	- 1.3	- 7.4	1500	260	7.0
872	1300	- 1.1	-20.7	2000	250	10.7
866	1363	0.6	-18.2	2500	258	16.0
850	1512	0.0	-20.3	3000	252	24.7
841	1598	- 0.2	-21.1			
800	1999	2.2	-20.3			
772	2287	2.2	-20.3			
750	2520	1.5	-20.9			
722	2825	0.5	-21.8			
700	3073	0.4	-21.2			

Ascn #3 21 October 1967 0546 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	160					
968	428	6.5	3.3	Sfc		0.0
956	530	6.1	- 0.1			
950	581	6.0	- 7.3			
942	650	5.8	- 5.5			
900	1022	4.0	- 8.4			
891	1103	3.5	- 9.1			
870	1296	1.7	- 8.1			
850	1483	0.8	- 8.4			
840	1578	0.3	- 8.1			
804	1927	- 2.7	-15.7			
800	1966	- 2.5	-16.9			
780	2167	- 2.0	-26.0			
768	2290	- 2.0	-23.8			
750	2478	- 3.2	-21.4			
735	2638	- 4.4	-21.0			
700	3021	- 6.5	-21.2			

Ascn #4 21 October 1967 1053 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	185					
971	428	8.9	- 6.1	Sfc		---
950	608	7.2	- 6.8			
900	1048	3.0	- 8.9			
893	1111	2.5	- 9.1			
850	1507	- 1.0	-11.1			
815	1841	- 3.9	-12.5			
801	1978	- 2.0	-12.9			
800	1988	- 2.0	-12.9			
750	2499	- 4.0	-17.6			
749	2509	- 4.1	-18.0			
700	3040	- 6.5	-26.9			

Ascn #5 22 October 1967 0538 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	242					
977	428	- 2.3	- 2.4	Sfc		0.0
962	551	3.2	3.2	150	258	6.8
950	653	3.4	- 0.4	300	262	13.3
948	670	3.5	- 0.6			
925	869	2.4	- 3.9	500	257	3.3
900	1089	0.8	- 4.0	1000	270	12.8
854	1508	- 2.0	- 4.3	1500	263	17.9
850	1545	- 1.2	- 5.4	2000	262	16.1
827	1766	2.7	-18.0			
800	2034	2.1	-18.5			
778	2258	1.5	-19.0			
768	2363	3.2	-17.6			
750	2554	2.5	-18.2			
742	2641	2.2	-18.5			
700	3109	0.0	-18.7			

Ascn #6 22 October 1967 1039 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	255					
979	428	8.1	- 9.3	Sfc	040	2.7
950	674	5.9	- 7.3	150	039	3.0
900	1113	2.0	- 6.1	300	047	3.7
889	1212	1.1	- 6.0			
871	1376	- 0.5	- 6.4	500	038	2.7
850	1572	2.6	-17.0	1000	009	0.7
848	1591	2.7	-19.9	1500	341	4.6
834	1726	3.4	-19.4	2000	343	8.1
806	2002	3.2	-20.2	2500	001	9.7
800	2063	3.5	-20.0	3000	359	14.5
778	2289	4.7	-19.0			
750	2587	3.9	-18.9			
728	2829	3.4	-19.4			
700	3146	2.0	-19.2			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn #7 23 October 1967 0522 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	239					
977	428	3.0	- 2.3	Sfc		0.0
966	520	7.0	- 0.6	150	161	4.5
950	658	10.9	0.3	300	184	4.8
948	675	11.1	0.0			
934	799	12.7	- 1.2	500	161	2.1
900	1109	11.0	- 4.2	1000	248	8.3
883	1267	10.0	- 5.5	1500	245	6.4
860	1487	10.7	- 7.0	2000	223	3.1
850	1584	10.6	- 6.7	2500	166	1.5
802	2067	10.5	- 3.2	3000	221	3.4
800	2088	10.2	- 3.8			
750	2620	6.0	- 4.7			
700	3179	1.4	- 6.6			

Ascn #8 23 October 1967 1146 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	226					
976	428	18.3	- 3.1	Sfc	200	0.9
950	657	16.0	- 4.5	150	196	2.7
918	946	13.4	- 4.7	300	187	3.2
900	1112	12.0	- 7.9			
891	1136	11.5	- 7.3	500	198	1.7
878	1318	11.0	-11.1	1000	182	2.3
864	1452	10.8	-12.6	1500	202	5.9
850	1588	11.4	-12.8	2000	199	7.4
841	1677	11.8	-12.5	2500	170	7.6
830	1787	11.5	-12.7	3000	170	7.9
805	2041	10.4	- 9.3			
800	2093	10.2	- 9.5			
775	2356	9.3	- 7.4			
750	2626	6.4	- 9.9			
743	2703	5.5	-10.7			
700	3187	2.7	-15.9			

Ascn #9 24 October 1967 0527 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	218					
975	428	8.6	1.2	Sfc		0.0
965	513	9.2	1.6	150	095	4.5
957	582	11.7	1.3	300	147	7.1
950	643	11.7	1.0			
927	847	11.6	- 0.2	500	095	2.1
911	992	10.6	- 1.1	1000	131	5.6
900	1093	11.3	- 0.1	1500	171	6.0
896	1131	11.6	0.0	2000	146	10.1
859	1481	8.8	- 3.4	2500	158	6.0
854	1529	8.8	-10.1			
850	1568	8.8	-10.6			
814	1925	8.8	-13.6			
800	2068	7.7	-13.8			
750	2596	4.4	-13.9			
733	2782	3.2	-13.6			
700	3154	1.4	-16.0			

Ascn #10 24 October 1967 1117 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	206					
974	428	15.5	- 1.1	Sfc	200	2.7
950	638	13.7	- 1.0	150	194	3.1
920	906	11.6	- 1.5	300	179	5.3
900	1090	11.6	- 0.2			
889	1192	11.6	0.6	500	199	2.7
851	1554	7.4	- 1.5	1000	222	3.5
850	1564	7.4	- 1.8	1500	188	5.3
806	2000	6.1	-12.4	2000	211	6.1
800	2061	5.5	-14.5	2500	210	12.7
793	2132	4.9	-18.1	3000	215	11.8
780	2267	5.0	-18.0			
755	2533	5.9	-16.6			
750	2587	5.5	-16.9			
700	3147	2.0	-19.2			

Ascn #11 25 October 1967 0543 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	94					
961	428	10.5	8.4	Sfc	250	2.7
950	523	10.1	8.4	150	251	4.7
900	971	9.0	8.9			
894	1026	8.8	8.8			
884	1119	8.1	8.1			
865	1297	7.3	5.1			

Ascn #12 26 October 1967 0535 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	123					
963	428	2.0	0.3	Sfc	250	4.5
957	478	2.1	- 6.7			
950	537	1.5	- 7.0			
900	967	- 1.7	- 8.6			
898	987	- 1.9	- 8.6			
850	1420	- 6.1	- 8.2			
825	1653	- 8.4	- 8.4			
800	1890	-10.3	-10.3			
798	1910	-10.5	-10.5			
786	2026	-10.8	-10.8			
762	2264	-12.0	-12.0			
750	2386	-11.6	-13.2			
700	2916	- 9.8	-20.6			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn #13 27 October 1967 0536 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	132					
964	428	2.5	- 4.4	Sfc	250	4.4
950	546	3.5	- 4.7	150	149	4.7
947	571	3.7	- 4.7	300	157	10.6
932	701	5.6	- 5.1			
900	986	4.5	-10.8	500	148	2.7
863	1327	3.2	-20.2	1000	190	10.2
850	1450	4.4	-17.9	1500	256	11.3
846	1488	4.6	-17.7			
834	1604	3.6	-17.9			
800	1941	2.4	-18.9			
795	1992	2.1	-19.1			
767	2279	- 0.4	- 6.6			
750	2458	- 1.6	- 7.3			
725	2727	- 3.5	- 8.4			
712	2870	- 4.4	- 9.4			
700	3004	- 4.9	-11.1			

Ascn #14 27 October 1967 1137 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	83					
959	428	7.5	- 4.2	Sfc	270	10.3
950	505	7.4	- 4.3	150	171	7.1
900	948	6.1	- 5.2	300	175	12.1
884	1095	5.7	- 5.6			
855	1367	4.4	- 5.6	500	182	4.7
850	1414	4.0	- 5.7	1000	204	14.4
804	1862	- 0.7	- 7.9	1500	224	23.4
800	1902	- 1.1	- 7.9	2000	231	24.3
768	2226	- 3.6	- 7.9	2500	219	27.3
750	2413	- 3.4	- 7.0			
710	2844	- 5.6	- 7.6			
700	2955	- 4.3	- 5.4			

Ascn #15 28 October 1967 0527 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	158					
967	428	1.0	- 2.9	Sfc	250	12.1
950	570	0.0	- 3.3	150	273	4.0
901	991	- 2.7	- 3.6	300	288	8.0
900	1000	- 2.9	- 4.0			
850	1449	- 6.9	- 6.9	500	257	5.4
846	1486	- 7.2	- 7.2	1000	261	11.0
820	1729	- 8.6	- 8.6			
800	1920	-10.1	-10.1			
776	2153	-12.0	-12.8			
750	2414	-13.0	-13.3			
742	2495	-13.4	-13.4			
723	2693	-13.0	-21.3			
700	2939	-14.3	-24.4			

Ascn #16 28 October 1967 1019 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	165					
968	428	2.7	- 5.2	Sfc	350	2.2
950	579	1.0	- 5.9	150	254	3.8
943	638	0.5	- 5.7	300	258	5.8
920	835	- 1.5	- 6.6			
900	1010	- 3.3	- 8.0	500	300	2.9
864	1331	- 6.2	- 9.7	1000	270	8.1
850	1458	- 6.5	-11.1			
830	1644	- 6.9	-13.2			
800	1930	- 9.5	-14.3			
750	2425	-13.9	-16.8			
742	2506	-14.5	-17.1			
731	2620	-13.0	-14.7			
700	2949	-14.5	-23.4			

Ascn #17 29 October 1967 0620 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	214					
974	428	- 5.5	- 6.0	Sfc		0.0
960	542	1.0	1.0			
950	626	0.1	- 0.9			
922	865	- 1.5	- 5.5			
900	1057	- 3.6	- 6.9			
874	1287	- 5.7	- 8.4			
850	1506	- 5.4	-10.7			
848	1524	- 5.3	-11.0			
800	1979	- 7.6	-16.0			
777	2206	- 8.8	-18.3			
760	2377	- 9.4	-24.2			
750	2479	-10.0	-25.1			
734	2645	-10.5	-25.9			
712	2880	- 9.1	-25.1			
700	3012	- 9.7	-24.8			

Ascn #18 29 October 1967 1240 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	230					
976	428	4.7	-11.0	Sfc		0.0
950	647	3.4	- 9.9	150	140	0.8
917	932	2.0	- 8.4	300	170	1.3
906	1029	0.2	- 8.0			
900	1087	- 0.1	- 8.3	500	140	0.4
864	1408	- 2.5	-11.2	1000	185	2.8
850	1537	- 3.1	-13.9	1500	176	3.1
835	1678	- 3.8	-17.0	2000	251	5.4
800	2015	- 4.3	-25.1	2500	289	10.7
797	2045	- 4.3	-25.7	3000	308	9.2
770	2316	- 5.2	-25.9			
750	2523	- 5.3	-27.2			
748	2543	- 5.3	-27.2			
700	3063	- 6.0	-27.8			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn #19 30 October 1967 1152 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	216					
975	428	15.6	----	Sfc		0.0
963	532	12.2	----	150	194	1.4
950	645	11.0	----	300	219	3.1
943	706	10.5	----			
912	984	11.0	----	500	170	0.6
904	1058	11.1	----	1000	249	8.0
900	1095	11.1	----	1500	252	11.9
854	1531	10.2	----	2000	228	8.8
850	1570	10.1	----	2500	223	14.2
800	2071	7.6	----	3000	235	9.8
773	2353	6.4	----			
750	2600	7.0	----			
744	2666	7.2	----			
700	3164	3.3	----			

Ascn #20 31 October 1967 0553 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	192					
972	428	8.6	- 0.1	Sfc	150	8.2
950	618	12.6	- 0.9	150	133	4.0
944	671	13.7	- 1.4	300	178	6.8
918	905	13.0	- 3.3			
900	1072	14.6	- 5.7	500	139	6.0
899	1081	14.6	- 5.7	1000	192	8.7
850	1551	12.3	- 7.1	1500	233	12.4
830	1750	11.5	- 7.8			

Ascn #21 31 October 1967 1150 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	180					
971	428	14.8	- 1.3	Sfc		0.0
950	612	14.0	- 2.0			
900	1065	12.4	- 3.8			
892	1140	12.1	- 4.1			
861	1435	10.7	- 4.9			
850	1542	11.1	0.0			
848	1561	11.3	0.9			
800	2045	8.8	1.0			
790	2149	8.4	1.5			
750	2576	6.2	- 5.7			
708	3045	3.8	-17.1			
700	3137	3.1	-18.3			

Ascn #160 8 April 1969 0600 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	198					
972	428	- 1.1	- 1.3	Sfc	080	1.5
952	596	9.9	- 2.4	150	086	1.3
950	614	10.0	- 2.6	300	199	0.8
923	854	11.8	- 7.6			
900	1064	10.5	- 9.2	500	083	1.4
858	1460	8.4	-15.2	1000	275	5.7
850	1537	8.4	-15.2	1500	287	12.2
821	1823	8.1	-15.5	2000	278	13.8
800	2036	6.6	-16.7	2500	280	13.0
750	2562	3.0	-19.0	3000	284	13.7
700	3117	- 0.9	-22.3			

Ascn #161 8 April 1969 1250 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	187					
972	428	20.4	4.0	Sfc	260	3.1
955	579	18.4	- 5.6	150	276	3.9
950	623	18.0	- 5.2	300	291	3.3
900	1081	13.1	- 5.9			
887	1202	11.9	- 6.0	500	268	3.5
850	1556	8.7	- 7.9	1000	321	3.0
818	1872	5.9	- 9.5	1500	285	5.5
800	2053	4.5	- 7.9	2000	298	10.9
788	2176	3.5	- 7.3	2500	286	15.2
765	2415	2.0	-13.8			
750	2575	1.1	-16.3			
723	2869	- 0.5	-21.3			
700	3127	- 0.2	-23.7			

Ascn #162 9 April 1969 0550 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	178					
971	428	10.2	2.3	Sfc	090	2.4
950	610	15.0	- 0.3	150	106	4.1
927	818	17.0	- 0.2	300	100	9.5
900	1068	15.1	- 1.0			
850	1548	11.4	- 3.5	500	098	3.2
837	1676	10.3	- 4.1	1000	183	17.1
800	2050	7.1	- 5.6	1500	179	5.4
750	2575	2.5	- 7.9	2000	203	3.2
700	3128	- 2.5	-11.2	2500	285	5.7
				3000	278	10.8

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn #163 9 April 1969 1351 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	129					
966	428	25.4	4.5	Sfc	210	9.4
950	573	23.6	2.4	150	224	12.1
915	897	19.8	- 3.8	300	228	11.0
900	1039	18.6	- 4.8			
860	1425	15.5	- 8.0	500	217	11.0
850	1524	16.2	- 9.6	1000	214	13.6
839	1635	17.0	-10.7	1500	218	12.2
800	2037	12.7	-12.5	2000	220	16.8
759	2474	7.9	-15.0	2500	208	15.0
750	2572	6.5	-14.3	3000	208	15.2
700	3129	- 1.4	-14.5			

Ascn #164 10 April 1969 0555 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	70					
958	428	10.3	9.6	Sfc	210	3.1
950	497	13.2	10.2	150	219	5.6
944	551	15.5	10.5	300	234	12.2
900	953	13.6	6.2			
850	1430	9.6	7.2	500	213	3.1
828	1646	7.7	7.1	1000	217	18.7
800	1928	5.8	5.3			
750	2452	2.2	1.9			
700	3005	- 1.7	- 1.7			

Ascn #165 10 April 1969 1230 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	59					
957	428	14.1	14.1	Sfc	240	6.3
950	489	13.6	13.6			
902	923	10.7	9.8			
900	941	10.6	9.7			
850	1414	8.1	7.0			
833	1580	7.2	6.1			
800	1911	5.3	3.0			
750	2434	2.0	- 2.3			
744	2499	1.6	- 3.0			
700	2987	- 1.7	- 6.2			

Ascn #166 11 April 1969 0548 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	152					
967	428	4.4	2.1	Sfc	320	1.3
956	520	3.1	- 4.6			
950	571	2.6	- 4.8			
900	1005	- 1.1	- 5.3			
850	1457	- 5.2	- 7.2			
825	1691	- 7.3	- 8.0			
816	1776	- 5.5	-17.9			
800	1933	- 2.0	-15.1			
798	1953	- 1.4	-14.9			
775	2186	- 1.0	-15.2			
750	2447	- 1.6	-14.8			
700	2994	- 3.0	-17.0			

Ascn #167 11 April 1969 1306 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	177					
970	428	10.6	- 0.5	Sfc	270	1.8
954	565	8.1	- 7.6	150	241	8.0
950	600	7.8	- 7.4	300	242	2.9
900	1041	3.3	- 8.7			
850	1500	- 1.5	-10.3	500	256	4.7
833	1660	- 3.1	-11.1	1000	247	5.1
807	1912	- 0.7	-16.5	1500	252	3.3
800	1982	- 1.0	-17.6	2000	268	10.5
750	2495	- 3.0	-24.7	2500	256	12.3
747	2526	- 3.1	-25.4	3000	263	12.7
700	3039	- 5.2	-27.1			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn #168 12 April 1969 0637 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	220					
975	428	- 2.8	- 3.0	Sfc		0.0
960	551	0.4	- 9.3	150	021	6.7
950	635	0.8	-10.6	300	024	10.7
933	780	1.4	-13.1			
900	1069	0.0	-15.1	500	014	2.9
890	1158	- 0.3	-15.8	1000	021	6.9
850	1525	- 1.1	-19.6	1500	305	4.5
813	1879	- 2.0	-25.2	2000	296	3.0
800	2008	- 1.0	-25.2	2500	277	6.2
794	2068	- 0.4	-24.7	3000	302	4.4
750	2523	- 1.5	-25.6			
700	3070	- 2.9	-26.7			

Ascn #169 12 April 1969 1305 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	221					
975	428	12.2	- 6.7	Sfc	060	3.1
960	557	10.2	-10.0	150	067	3.3
950	643	9.4	-10.7	300	090	4.2
900	1087	5.0	-13.4			
850	1549	0.3	-16.1	500	059	3.1
827	1768	- 1.8	-17.1	1000	088	4.5
800	2032	- 2.0	-23.2	1500	079	3.3
799	2042	- 2.0	-23.2	2000	085	2.5
789	2143	- 0.2	-21.7	2500	021	5.8
766	2379	0.0	-21.5			
750	2548	- 1.0	-21.7			
700	3095	- 4.1	-22.2			

Ascn #170 14 April 1969 0553 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	187					
972	428	8.9	0.1	Sfc	090	0.9
958	548	11.0	- 2.4	150	140	3.0
950	618	11.7	- 1.7	300	212	4.6
935	751	13.0	- 0.6			
900	1069	10.7	- 2.3	500	120	2.1
879	1265	9.3	- 3.6	1000	245	6.3
850	1542	7.7	- 3.7	1500	149	3.3
813	1907	5.5	- 4.6	2000	144	2.3
800	2038	4.6	- 7.5	2500	086	0.4
763	2422	1.9	-18.7	3000	239	1.8
750	2560	1.4	-19.7			
725	2832	0.4	-21.2			
700	3112	- 1.9	-22.5			

Ascn #171 14 April 1969 1306 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	189					
971	428	17.9	2.2	Sfc	160	1.8
950	613	16.7	- 2.8	150	165	1.8
947	640	16.3	- 4.3	300	168	3.3
900	1069	12.0	- 5.9			
864	1407	8.4	- 7.7	500	161	2.6
850	1542	7.8	- 8.2	1000	142	2.8
800	2039	5.1	- 9.8	1500	136	3.8
784	2203	4.3	-10.5	2000	180	10.2
760	2456	4.0	-18.9	2500	195	9.8
750	2563	3.1	-19.6	3000	162	7.0
700	3117	- 1.2	-22.5			

Ascn #172 15 April 1969 0557 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	169					
970	428	12.2	6.3	Sfc	140	4.5
950	601	10.8	2.6	150	146	6.5
948	619	10.7	2.3	300	169	9.7
900	1050	9.6	3.1			
890	1142	9.4	3.4	500	067	5.4
850	1521	7.0	5.0	1000	189	7.5
836	1657	6.0	5.2	1500	240	8.3
800	2016	4.4	3.6	2000	217	10.0
771	2316	3.1	2.3			
750	2539	2.0	1.2			
700	3093	- 0.9	- 1.6			

Ascn #173 15 April 1969 1000 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	177					
971	428	10.6	8.2	Sfc	150	4.5
957	548	8.5	5.6			
950	608	8.6	6.2			
933	758	9.4	8.5			
913	937	8.5	7.9			
900	1055	8.2	7.4			
850	1525	7.0	5.3			
837	1651	6.7	4.7			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn #174 17 April 1969 0600 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	118					
964	428	8.4	8.1	Sfc	100	0.9
954	514	14.8	10.5	150	195	3.7
950	550	14.9	10.1	300	219	4.4
921	812	15.6	7.1			
900	1007	14.9	4.0	500	166	1.5
869	1302	13.6	- 2.3	1000	251	5.6
850	1487	12.6	- 4.0	1500	265	7.7
800	1992	10.0	- 9.6			
750	2524	5.6	- 6.9			
700	3083	1.1	- 6.4			

Ascn #175 17 April 1969 1238 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	98					
963	428	24.1	8.1	Sfc	250	4.9
950	545	21.1	4.6	150	225	3.9
947	572	20.5	4.1	300	220	5.4
900	1007	16.0	2.0			
864	1351	12.4	- 0.1	500	237	4.2
850	1487	11.2	- 0.2	1000	213	6.7
800	1988	6.6	- 2.0	1500	231	5.2
766	2342	3.5	- 3.5	2000	261	5.0
754	2471	6.1	- 8.9	2500	252	15.9
750	2514	5.9	- 9.1	3000	252	8.5
736	2668	5.0	- 9.5			
700	3075	2.5	- 8.5			

Ascn #176 18 April 1969 0554 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	17					
954	428	17.6	10.3	Sfc	150	3.1
950	463	17.7	9.9	150	186	5.4
926	682	18.6	8.0	300	199	9.9
900	924	16.7	6.5			
883	1086	15.5	5.7	500	167	3.7
850	1407	13.5	4.6	1000	208	15.5
828	1626	12.1	3.8	1500	232	20.4
803	1881	9.5	4.7	2000	241	17.2
800	1912	9.2	4.4	2500	226	13.5
763	2302	6.5	2.6			
752	2421	6.0	0.0			
750	2443	5.8	- 0.2			
700	3002	1.0	- 1.8			

Ascn #177 18 April 1969 1116 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	6					
952	428	18.6	14.1	Sfc	210	1.3
950	445	18.5	13.6			
937	563	17.2	9.1			
900	904	15.0	7.8			
850	1384	11.5	5.6			
803	1855	8.3	3.7			
800	1886	8.0	3.8			
764	2264	6.0	5.4			
750	2415	5.2	4.4			
736	2569	4.4	3.3			
700	2975	2.5	- 0.9			

Ascn #178 28 April 1969 0500 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	84					
960	428	12.8	6.2	Sfc	220	1.5
950	516	16.8	4.8	150	217	6.0
920	789	17.6	1.5	300	263	11.9
900	975	16.2	1.5			
850	1457	12.6	2.4	500	196	3.9
826	1696	10.8	2.1	1000	270	16.7
800	1961	8.1	1.2	1500	276	20.6
769	2284	4.6	- 0.1	2000	271	29.6
756	2423	3.9	- 4.0	2500	262	27.8
750	2488	3.4	- 4.0	3000	239	16.6
710	2929	0.0	- 4.4			
700	3043	2.5	-23.2			

Ascn #179 29 April 1969 0459 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	102					
962	428	7.8	7.8	Sfc		0.0
950	531	7.0	6.7			
926	740	5.4	4.8			
900	972	3.6	2.5			
879	1163	2.2	0.7			
850	1433	2.9	1.7			
847	1462	3.0	1.8			
801	1911	0.0	- 3.3			
800	1921	0.0	- 3.3			
750	2433	- 5.0	- 6.2			
734	2602	- 6.7	- 7.4			
710	2863	- 4.1	-26.2			
700	2975	- 2.6	-24.3			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn #180   30 April 1969   0437 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	155					
967	428	3.9	- 0.1	Sfc	320	1.5
950	571	2.8	0.0	150	338	3.7
914	882	0.6	0.1	300	351	4.8
900	1006	0.1	- 1.8			
886	1131	- 0.2	- 3.4	500	329	2.7
850	1461	- 3.0	- 4.4	1000	008	6.9
818	1764	- 5.5	- 5.5	1500	334	4.6
806	1880	- 3.8	- 5.5			
800	1939	- 3.9	- 7.8			
786	2078	- 4.1	-15.1			
750	2447	- 5.4	-16.6			
700	2986	- 7.5	-18.8			

Ascn #181   30 April 1969   1155 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	171					
970	428	11.1	- 6.7	Sfc	360	1.5
950	600	9.4	- 7.3	150	053	5.8
916	900	6.5	- 8.6	300	347	4.2
900	1044	5.2	- 9.4			
850	1507	0.9	-12.8	500	099	0.7
815	1843	- 2.2	-15.3	1000	343	4.8
800	1990	- 3.0	-16.3	1500	046	0.3
790	2089	- 3.4	-17.0			
788	2109	- 1.3	-15.9			
750	2502	- 3.4	-21.6			
729	2726	- 4.6	-25.3			
700	3045	- 5.5	-26.7			

Ascn #182   1 May 1969   0509 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	192					
971	428	1.7	- 2.6	Sfc	080	1.5
951	596	6.2	- 1.4			
950	605	6.2	- 1.4			
908	975	5.6	- 3.2			
900	1047	5.0	- 3.7			
850	1510	2.1	- 6.2			
849	1520	2.0	- 6.3			
800	1995	- 2.6	- 8.3			
786	2135	- 4.0	- 9.2			
759	2411	- 2.7	-25.1			
750	2505	- 3.0	-25.3			
700	3050	- 4.6	-27.3			

Ascn #183   1 May 1969   1218 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	192					
972	428	15.8	0.7	Sfc	290	1.5
957	558	12.9	- 7.1	150	313	1.0
950	620	17.2	- 7.2	300	341	0.7
900	1068	7.2	- 8.0			
876	1289	4.8	- 9.0	500	301	1.2
850	1533	2.8	- 9.4	1000	299	1.2
800	2020	- 1.4	-11.5	1500	193	0.7
796	2060	- 1.6	-11.7	2000	166	2.2
781	2211	- 2.0	-24.5	2500	033	2.4
750	2533	- 2.7	-25.1			
700	3078	- 4.0	-26.9			

Ascn #184   2 May 1969   0441 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	182					
971	428	6.6	3.2	Sfc		0.0
961	513	11.0	2.3	150	177	3.7
950	609	11.5	1.7	300	200	6.4
941	688	12.0	1.3			
900	1059	10.2	- 0.8	500	166	2.0
889	1161	9.7	- 1.3	1000	233	7.0
850	1531	6.7	- 4.4	1500	229	5.1
800	2025	2.6	- 3.4	2000	244	5.7
795	2075	2.3	- 3.7	2500	310	3.8
775	2281	2.6	-20.7	3000	337	3.4
750	2546	2.1	-21.1			
700	3101	0.7	-22.3			

Ascn #185   2 May 1969   1234 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	174					
970	428	21.1	5.4	Sfc	250	3.6
950	606	19.1	- 4.3	150	255	4.7
947	633	18.9	- 6.6	300	227	4.4
900	1066	14.4	- 8.2			
862	1427	10.5	- 9.7	500	252	4.1
850	1543	9.9	- 9.2	1000	208	5.0
800	2043	7.0	- 9.8	1500	179	4.4
754	2527	4.3	-10.2	2000	243	1.6
750	2570	4.0	-10.8	2500	345	4.8
700	3126	- 0.3	-18.4	3000	324	6.0

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn #186 3 May 1969 0446 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	148					
967	428	8.9	5.6	Sfc	220	1.5
957	514	15.7	3.8	150	235	6.5
950	577	16.1	4.2	300	262	11.3
928	775	17.1	4.4			
900	1035	15.4	4.1	500	225	3.9
850	1515	12.0	3.0	1000	280	17.7
848	1535	11.9	2.9	1500	276	16.0
822	1794	10.4	- 3.6	2000	282	18.3
800	2019	9.0	- 6.4	2500	278	18.1
751	2539	5.9	-14.8	3000	284	14.4
750	2550	5.8	-14.8			
700	3109	0.7	-14.1			

Ascn #187 3 May 1969 1122 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	139					
967	428	23.9	5.7	Sfc	270	6.2
953	554	21.6	3.7	150	286	9.6
950	581	21.3	3.5	300	275	13.4
917	885	18.5	2.3			
900	1044	17.0	1.8	500	284	6.7
850	1526	12.6	1.0	1000	252	15.3
849	1536	12.5	0.9			
800	2029	7.4	- 2.0			
779	2247	5.1	- 3.4			
756	2492	5.5	-14.5			
750	2557	5.1	-14.9			
700	3116	1.7	-20.1			

Ascn #188 5 May 1969 0445 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	149					
967	428	7.2	1.7	Sfc		0.0
950	574	11.4	3.4	150	083	4.9
949	583	11.5	3.3	300	070	3.7
928	771	14.9	- 3.9			
903	1001	14.1	-12.1	500	083	2.7
900	1029	14.0	-11.4	1000	026	5.0
856	1450	13.6	- 4.5	1500	352	8.9
850	1509	13.0	- 3.7	2000	359	7.4
807	1941	9.1	- 1.0	2500	351	11.2
800	2013	8.4	- 1.6	3000	335	11.9
750	2542	4.6	- 6.6			
700	3100	0.6	-12.1			

Ascn #189 5 May 1969 1214 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	139					
967	428	22.8	5.2	Sfc	340	1.8
950	581	20.4	- 0.8	150	329	2.0
947	608	20.0	- 2.3	300	351	3.0
900	1042	15.6	- 3.3			
864	1385	12.3	- 4.3	500	331	1.8
850	1521	11.2	- 3.3	1000	021	3.1
823	1789	9.4	- 1.9	1500	034	5.6
811	1911	9.2	- 3.0	2000	350	10.5
800	2024	8.4	- 3.7	2500	347	9.2
750	2553	4.5	- 8.2			
700	3110	0.1	-13.2			

Ascn #190 6 May 1969 0443 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	137					
966	428	9.7	0.8	Sfc	080	1.5
950	566	12.4	2.2			
930	745	15.6	3.7			
900	1022	13.6	3.6			
888	1134	13.1	5.5			
850	1500	11.5	2.5			
849	1510	11.4	2.1			
800	2002	7.6	- 1.3			
770	2316	5.4	- 3.4			
750	2530	3.5	- 3.9			
719	2870	0.7	- 4.9			
700	3085	- 0.2	-12.5			

Ascn #191 6 May 1969 1211 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	130					
966	428	23.9	1.5	Sfc	330	1.8
950	572	22.0	1.6	150	352	2.7
900	1035	16.4	- 0.7	300	339	2.7
891	1121	15.5	- 0.6			
850	1517	12.3	- 2.7	500	344	2.7
800	2020	8.0	- 5.4	1000	350	2.2
783	2197	6.6	- 6.3	1500	335	3.1
750	2548	4.4	-11.2	2000	336	6.2
700	3106	0.9	-22.1	2500	330	11.3
				3000	329	11.9

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn #192   7 May 1969   0445 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	124					
965	428	14.4	4.7	Sfc		0.0
950	561	20.7	6.3	150	195	3.7
949	570	20.9	6.1	300	200	7.9
930	744	21.4	5.3			
900	1026	19.1	4.8	500	176	1.5
850	1512	15.0	3.1	1000	234	5.4
815	1865	12.0	1.9	1500	247	6.5
800	2020	10.5	1.6	2000	249	7.1
750	2552	5.5	0.2	2500	266	13.6
700	3110	0.1	- 2.1			

Ascn #193   7 May 1969   1119 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	134					
967	428	26.7	14.2	Sfc	250	6.7
950	583	24.2	6.0	150	257	5.8
949	592	24.1	5.4	300	254	7.5
900	1050	19.9	4.0			
866	1379	16.8	2.8	500	258	4.9
850	1537	15.0	0.0	1000	260	10.4
837	1667	13.8	- 1.3	1500	252	10.3
812	1921	11.5	0.0			
800	2045	10.5	0.5			
750	2577	6.1	0.6			
723	2876	3.6	0.3			
712	3000	1.6	- 8.8			
700	3136	0.4	- 9.9			

Ascn #194   8 May 1969   0450 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	102					
962	428	17.2	11.9	Sfc	140	3.6
950	534	17.9	11.5	150	166	5.9
905	950	20.2	8.9	300	191	8.8
900	997	19.9	8.6			
850	1485	16.2	5.8	500	148	4.5
849	1495	16.1	5.7	1000	205	12.6
800	1995	11.4	4.4	1500	215	13.6
768	2333	8.1	3.1	2000	215	13.6
750	2528	6.7	0.0	2500	224	17.4
743	2605	6.2	- 1.4			
709	2987	3.5	- 2.4			
700	3090	2.7	- 5.9			

Ascn #195   9 May 1969   0800 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	-73					
948	428	14.6	12.0	Sfc	210	5.7
921	670	12.6	11.0	150	218	7.5
900	863	11.0	9.6	300	223	12.8
877	1078	9.4	8.2			
850	1336	8.3	5.9	500	216	3.7
810	1732	6.5	2.2	1000	236	17.6
800	1834	5.8	2.4	1500	243	18.0
788	1957	4.9	2.6			
776	2082	4.1	0.2			
750	2358	1.8	- 1.9			
712	2774	- 1.8	- 4.9			
700	2909	- 2.3	- 6.1			

Ascn #196   10 May 1969   0441 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	41					
954	428	1.9	- 0.8	Sfc	240	1.5
950	461	1.9	- 0.6			
917	746	2.0	0.0			
900	897	2.1	- 0.9			
891	978	2.1	- 1.3			
850	1356	- 0.6	- 3.3			
824	1603	- 2.4	- 4.7			
800	1837	- 3.9	- 7.0			
761	2230	- 6.2	-10.8			
750	2343	- 7.2	-11.0			
720	2660	-10.4	-12.9			
700	2877	- 9.7	-18.7			

Ascn #197   9 October 1969   0544 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	184					
971	428	2.8	2.5	Sfc		0.0
955	564	12.2	3.7	150	210	3.3
950	608	12.3	2.4	300	224	5.7
942	679	12.4	1.1			
900	1058	9.4	- 2.2	500	210	1.6
850	1528	5.6	- 6.6	1000	277	6.6
848	1547	5.5	- 6.7	1500	292	13.0
818	1842	6.1	-16.5	2000	264	11.8
800	2024	5.7	-16.1	2500	274	10.0
750	2550	4.7	-15.8	3000	279	13.8
734	2726	4.4	-16.0			
700	3110	2.0	-17.5			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn #198 9 October 1969 1158 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	189					
972	428	18.9	1.8	Sfc	240	2.7
950	622	16.2	0.0	150	255	3.3
918	911	12.8	-2.6	300	254	3.0
901	1067	12.0	-2.9			
900	1077	11.7	-3.2	500	247	3.0
850	1550	7.0	-5.0	1000	250	5.4
846	1589	6.7	-5.3	1500	240	5.7
825	1794	5.9	-16.6	2000	270	9.5
800	2047	8.0	-16.3	2500	283	6.1
750	2577	6.0	-17.2			
713	2990	4.4	-18.5			

Ascn #199 10 October 1969 0527 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	156					
968	428	9.3	7.1	Sfc		0.0
956	531	13.7	5.6	150	176	4.1
950	584	14.6	4.6	300	212	6.4
946	620	15.1	4.2			
902	1021	14.1	0.0	500	174	2.0
900	1040	14.0	0.0	1000	207	8.0
862	1401	11.5	-1.6	1500	240	7.9
850	1518	10.0	-1.6	2000	224	14.5
835	1665	8.0	-2.6	2500	209	10.5
803	1989	11.1	-17.2	3000	210	14.7
800	2020	11.0	-17.3			
750	2555	8.1	-19.6			
700	3120	5.0	-22.1			

Ascn #200 10 October 1969 1200 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	144					
967	428	22.2	8.0	Sfc	220	4.5
950	580	20.4	2.7	150	212	4.0
948	599	20.3	2.1	300	209	5.4
900	1042	16.0	1.7			
850	1523	11.6	0.6	500	217	3.2
849	1532	11.5	0.5	1000	201	7.1
805	1973	7.3	-1.9	1500	195	6.0
800	2024	9.2	-7.4	2000	207	19.2
794	2087	11.0	-17.3	2500	206	15.1
773	2310	12.2	-16.4	3000	201	18.4
750	2562	10.9	-17.4			
700	3134	7.9	-19.8			

Ascn #201 11 October 1969 0522 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	143					
967	428	13.0	11.8	Sfc	140	4.9
950	576	13.3	9.8	150	150	6.3
941	656	13.5	8.4	300	175	10.2
925	801	16.4	5.4			
900	1033	15.0	5.2	500	144	5.5
850	1513	12.1	4.8	1000	212	8.9
848	1532	12.0	4.9	1500	220	10.1
800	2016	8.6	-2.0	2000	172	2.6
798	2037	8.4	-2.5	2500	195	9.4
784	2184	10.4	-17.8	3000	188	13.6
760	2442	11.5	-18.0			
750	2553	10.8	-18.5			
700	3123	7.2	-20.3			

Ascn #202 13 October 1969 0527 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	148					
967	428	12.2	11.9	Sfc	170	2.7
958	506	18.0	15.3	150	159	5.4
950	578	18.1	14.8	300	163	13.2
912	927	18.8	11.9			
900	1040	18.0	11.1	500	154	2.8
858	1445	14.9	7.9	1000	201	8.9
850	1524	14.5	6.8	1500	212	6.8
816	1868	13.5	5.4	2000	238	7.2
800	2034	12.5	3.9	2500	249	5.1
775	2299	11.1	5.6	3000	263	6.2
750	2572	11.1	1.0			
739	2695	11.1	-1.6			
700	3145	8.6	-7.1			

Ascn #203 13 October 1969 1322 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	104					
964	428	28.3	14.9	Sfc	200	5.8
950	556	25.4	13.0	150	213	5.8
944	611	24.3	12.6	300	213	5.8
900	1024	20.2	10.3			
850	1511	15.3	7.3	500	206	4.9
822	1793	12.5	5.6	1000	219	8.0
800	2020	12.9	0.9	1500	223	6.5
795	2073	13.0	-0.2	2000	240	13.4
750	2559	10.5	-2.8	2500	244	8.0
700	3130	7.7	-5.7	3000	226	6.3

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn #204 14 October 1969 0519 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	116					
963	428	7.8	7.4	Sfc	290	3.6
950	539	8.7	6.1			
945	583	9.1	5.8			
900	984	6.3	4.8			
869	1270	4.3	4.0			
850	1451	6.1	5.5			
844	1509	6.7	5.9			
800	1949	8.6	7.7			
788	2074	9.2	8.3			
750	2482	7.7	6.3			
700	3048	5.8	3.6			

Ascn #205 15 October 1969 0528 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	187					
970	428	- 2.2	- 2.3	Sfc		0.0
950	594	1.1	- 0.3			
948	611	2.1	0.3			
922	835	1.6	- 2.3			
900	1029	- 0.4	- 2.7			
878	1226	- 2.2	- 3.4			
870	1298	- 2.2	- 6.7			
864	1354	1.7	- 5.2			
855	1438	2.5	-14.6			

Ascn #206 15 October 1969 1327 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	168					
969	428	13.3	0.6	Sfc	070	2.7
950	593	11.6	- 0.8	150	057	2.9
900	1041	7.0	- 5.6	300	061	2.0
888	1151	6.0	- 6.5			
854	1470	7.0	-15.1	500	064	2.8
850	1509	6.8	-15.2	1000	060	1.6
808	1923	4.5	-16.5	1500	110	3.2
800	2004	4.1	-16.9	2000	095	2.5
758	2440	2.1	-18.0	2500	087	3.5
750	2526	1.8	-18.8			
700	3080	0.0	-22.9			

Ascn #207 17 October 1969 0523 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	103					
962	428	7.2	4.8	Sfc	260	4.0
952	513	6.7	1.6	150	284	5.2
950	530	6.5	1.4	300	276	6.3
900	970	2.4	0.1			
884	1115	1.2	- 0.2	500	278	4.6
850	1429	- 1.0	- 3.5	1000	274	10.0
844	1485	- 1.4	- 4.0	1500	265	19.9
800	1909	- 5.0	- 6.2			
765	2258	- 8.0	- 8.0			
754	2372	- 1.6	-19.1			
750	2414	- 1.6	-18.6			
742	2500	- 1.5	-18.1			
700	2961	- 4.8	-20.1			

Ascn #208 17 October 1969 1226 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	132					
965	428	6.7	- 2.7	Sfc	250	8.0
950	556	5.4	- 3.9	150	265	9.1
900	992	0.9	- 8.3	300	274	11.2
894	1046	0.4	- 8.8			
				500	265	8.3

Ascn #209 18 October 1969 0519 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	200					
972	428	- 1.7	- 1.9	Sfc	220	2.2
959	535	- 0.4	- 4.8	150	236	5.6
950	610	0.0	- 4.6	300	259	9.7
938	712	0.6	- 4.2			
900	1043	- 0.4	- 9.5	500	226	3.7
896	1079	- 0.5	-10.1	1000	292	10.8
878	1240	- 1.7	- 8.4	1500	285	12.2
855	1451	- 3.0	-11.7			
850	1497	- 2.9	-14.6			
838	1610	- 2.7	-23.8			
822	1763	- 3.0	-22.8			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn #210 18 October 1969 1203 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	209					
974	428	10.0	0.0	Sfc	240	5.8
951	624	6.6	- 9.7	150	254	6.9
950	633	6.5	- 9.8	300	253	12.7
900	1073	2.6	-11.7			
890	1163	1.9	-11.9	500	259	7.1
850	1531	- 1.3	-13.2	1000	257	10.9
849	1541	- 1.4	-13.3	1500	264	11.0
837	1654	- 2.2	-17.8	2000	289	15.5
819	1827	- 1.0	-20.0	2500	283	19.1
800	2014	- 1.8	-21.3	3000	288	22.6
785	2164	- 2.4	-22.3			
773	2287	- 1.4	-16.0			
750	2527	- 1.1	-19.6			
738	2656	- 1.0	-21.7			
700	3076	- 2.4	-23.5			

Ascn #211 21 October 1969 0623 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	84					
960	428	7.9	6.7	Sfc	260	7.6
950	514	7.9	4.7	150	280	8.8
948	531	7.9	4.5	300	277	10.4
900	956	4.1	2.9			
877	1166	2.3	2.1	500	280	8.2
850	1417	1.2	- 2.9	1000	293	19.0
836	1551	0.6	- 6.0			
806	1842	- 2.1	- 7.0			
800	1902	- 2.2	- 8.7			
783	2072	- 2.4	-15.8			
750	2414	- 2.1	-17.8			
747	2446	- 2.1	-18.2			
700	2960	- 4.7	-24.8			

Ascn #212 21 October 1969 1220 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	93					
961	428	10.3	2.9	Sfc	270	7.6
950	523	9.3	0.0	150	284	7.6
943	584	8.7	- 1.4	300	284	9.5
900	967	5.2	- 2.8			
850	1429	1.0	- 4.4	500	277	7.5
846	1467	0.7	- 4.3	1000	271	15.5
808	1833	- 2.9	- 4.3	1500	268	15.1
800	1912	- 3.4	- 5.1			
764	2275	- 5.2	- 8.1			
752	2400	- 5.2	-16.7			
750	2421	- 5.1	-19.6			
728	2657	- 3.7	-21.4			
700	2967	- 3.7	-22.9			

Ascn #213 23 October 1969 0536 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	216					
974	428	- 3.9	- 3.9	Sfc	280	2.2
959	550	- 3.3	- 7.1	150	303	3.9
950	624	- 3.9	- 6.8	300	318	6.7
945	666	- 4.2	- 6.5			
900	1048	- 7.2	- 8.0	500	291	3.1
875	1267	- 8.8	- 8.8	1000	331	11.4
850	1491	- 9.6	-11.7			
847	1518	- 9.7	-11.9			
822	1749	-11.4	-11.4			
800	1956	-13.0	-13.3			
758	2365	-16.0	-16.7			
750	2445	-15.4	-23.5			
746	2486	-15.2	-28.2			
730	2651	- 9.9	-24.2			
700	2975	-10.5	-24.8			

Ascn #214 24 October 1969 0536 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	299					
984	428	- 8.1	- 8.4	Sfc	090	1.3
971	532	- 3.7	- 8.0	150	153	3.6
950	704	- 4.0	- 9.4	300	145	1.9
946	737	- 4.1	- 9.7			
900	1129	- 5.9	----	500	120	2.4
896	1164	- 6.0	----	1000	060	2.5
864	1450	- 2.5	-18.1			
850	1580	- 2.5	-19.4			
806	2001	- 2.5	-22.4			
800	2060	- 2.6	-22.5			
756	2508	- 3.7	-25.9			
750	2571	- 3.4	-25.7			
739	2688	- 2.4	-24.8			
700	3118	- 3.0	-19.4			

Ascn #215 24 October 1969 1237 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	276					
982	428	7.8	- 7.8	Sfc	180	4.0
971	520	4.5	-12.3	150	220	1.5
950	699	3.1	-17.1	300	224	2.5
900	1135	- 0.2	-19.4			
866	1443	- 0.2	-19.4	500	199	3.2
858	1518	1.9	-19.3	1000	233	4.6
850	1593	1.6	-20.2	1500	248	3.0
812	1960	0.4	-22.5	2000	306	5.2
800	2080	0.7	-14.1	2500	310	6.9
785	2232	1.2	- 7.8	3000	304	7.7
768	2408	2.1	- 7.2			
750	2599	1.0	- 9.0			
700	3150	- 2.5	-14.3			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn #216 25 October 1969 0530 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	232					
976	428	0.9	0.3	Sfc	030	1.3
956	596	8.2	- 7.5			
950	648	8.0	- 7.7			
925	867	7.0	- 8.5			
900	1091	5.5	-10.3			
874	1330	3.9	-11.7			
854	1518	4.2	-14.6			
850	1556	4.0	-15.3			
800	2047	2.7	-17.5			
778	2272	2.1	-18.5			
750	2567	- 0.5	-16.4			
700	3113	- 5.4	-14.9			

Ascn #217 28 October 1969 0556 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	212					
973	428	- 1.0	- 1.0	Sfc		0.0
955	577	0.8	- 6.3	150	285	3.5
950	619	0.7	- 6.4	300	280	6.5
926	824	0.2	- 7.1			
900	1051	- 1.6	- 6.9	500	285	1.7
850	1503	- 5.6	- 7.7	1000	285	9.3
824	1745	- 7.8	- 8.5	1500	291	7.5
800	1974	- 9.0	- 9.1			
786	2111	- 9.7	- 9.7			
759	2380	-11.6	-12.8			
750	2471	-12.4	-17.3			
739	2584	-13.0	-24.4			
723	2751	-12.5	-20.4			
700	2997	-13.4	-24.7			

Ascn #218 29 October 1969 0554 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	285					
982	428	- 6.2	- 6.3	Sfc		0.0
972	508	- 1.4	- 5.2	150	082	6.8
951	682	- 2.0	-10.1	300	078	7.2
950	690	- 1.9	-10.2			
930	860	0.0	-11.7	500	080	3.7
906	1068	- 1.8	-14.6	1000	058	3.0
900	1121	- 1.9	-15.3	1500	068	5.9
865	1436	- 2.2	-19.1			
850	1575	- 2.4	-20.2			
823	1831	- 2.6	-23.7			
800	2056	- 1.8	-23.0			
770	2361	- 0.8	-22.2			
750	2570	- 1.9	-22.5			
719	2905	- 3.5	-23.8			
700	3117	- 3.2	-23.6			

Ascn #219 29 October 1969 1241 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	276					
982	428	8.7	- 3.8	Sfc	050	3.6
959	622	5.3	-10.0	150	056	3.6
950	699	4.7	-11.4	300	083	3.1
900	1136	1.6	-17.8			
895	1181	1.4	-18.6	500	053	3.6
871	1400	1.2	-20.5	1000	094	3.6
850	1596	2.4	-20.2	1500	108	6.3
832	1770	3.4	-20.1	2000	116	10.2
800	2087	2.0	-20.5	2500	112	8.8
750	2604	- 0.4	-20.6	3000	120	6.6
749	2615	- 0.5	-20.7			
700	3154	- 2.5	-22.4			

Ascn #220 30 October 1969 0611 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	268					
980	428	- 4.2	- 4.4	Sfc	100	1.3
969	518	2.7	- 7.2	150	120	3.4
950	678	3.0	-10.6	300	152	6.4
931	841	3.4	-14.8			
914	991	5.6	-18.3	500	096	2.7
900	1117	6.0	-17.9	1000	152	13.0
882	1282	6.5	-16.8			
850	1584	4.4	-18.5			
800	2074	0.8	-20.9			
790	2175	0.0	-21.5			
750	2590	- 1.5	-21.6			
749	2600	- 1.6	-21.7			
725	2860	0.0	-20.9			
700	3140	- 2.4	-22.9			

Ascn #221 31 October 1969 0600 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	215					
974	428	6.7	- 2.9	Sfc	140	6.3
950	632	6.1	- 3.0	150	153	8.3
944	684	6.0	- 2.8	300	161	13.6
933	780	7.8	- 0.6			
900	1075	6.2	- 0.5	500	146	7.2
850	1541	3.8	- 0.5	1000	211	5.8
845	1589	3.6	- 0.5	1500	220	8.9
833	1705	2.9	- 0.9	2000	194	10.8
800	2032	3.1	- 9.8	2500	191	8.8
795	2083	3.2	-11.9	3000	249	4.4
781	2227	5.8	-18.9			
750	2558	5.2	-19.3			
744	2623	5.1	-19.4			
711	2992	3.0	-19.7			
700	3118	1.5	- 8.6			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn #222 31 October 1969 1253 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	194					
973	428	14.9	4.6	Sfc	140	4.5
950	628	11.6	- 9.4	150	127	3.4
900	1076	7.5	- 6.9	300	138	5.4
880	1260	6.0	- 5.9			
861	1439	6.4	- 3.8	500	134	4.0
850	1544	5.7	- 3.9	1000	152	6.5
814	1896	3.7	- 4.5	1500	199	4.8
800	2037	3.4	- 7.7	2000	222	13.2
768	2368	2.9	-20.5	2500	202	19.8
759	2464	6.5	-23.0	3000	165	7.7
750	2561	6.0	-22.3			
700	3123	3.2	-21.0			

Ascn #223 1 November 1969 0611 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	162					
969	428	12.1	11.2	Sfc	140	5.4
950	592	10.4	9.5	150	148	4.9
921	849	7.9	7.1	300	142	6.5
900	1038	7.2	6.6			
860	1411	5.8	5.5	500	152	4.5
850	1506	5.7	4.0	1000	154	11.7
823	1770	5.6	- 1.1			
800	2001	4.4	- 0.5			
750	2524	1.5	- 0.2			
737	2664	0.8	0.0			
700	3076	- 2.0	- 2.4			

Ascn #224 3 November 1969 0616 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	112					
963	428	7.2	7.2	Sfc	290	1.3
950	539	6.0	4.9	150	325	3.2
939	634	5.2	3.2	300	337	3.5
915	845	5.5	2.3			
900	980	4.7	2.2	500	310	1.8
863	1320	2.7	1.6	1000	326	5.2
850	1444	5.0	4.8	1500	286	6.1
848	1463	5.4	5.4			
800	1936	3.0	3.0			
750	2456	0.5	0.5			
749	2467	0.4	0.4			
725	2727	- 1.1	- 6.2			
700	3006	- 2.9	- 6.5			

Ascn #225 6 November 1969 0615 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	32					
953	428	5.3	1.4	Sfc	290	7.6
950	453	5.0	0.9	150	308	8.4
936	574	4.1	- 1.0	300	313	10.4
900	891	1.4	- 1.3			
854	1310	- 2.0	- 2.0	500	299	8.0
850	1347	- 2.3	- 2.3	1000	312	14.5
812	1709	- 4.8	- 4.8			
800	1826	- 5.6	-13.4			
791	1914	- 6.1	-26.0			
758	2247	- 7.5	-22.1			
750	2330	- 6.8	-21.1			
731	2531	- 4.8	-17.6			
700	2872	- 3.3	-18.4			

Ascn #226 6 November 1969 1307 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	63					
957	428	4.8	0.3	Sfc	310	5.4
950	487	4.1	- 0.6	150	320	7.5
929	668	2.4	- 3.9	300	321	11.7
900	923	0.3	- 3.8			
891	1004	- 0.1	- 3.6	500	319	4.5
850	1379	- 2.5	- 3.9	1000	320	15.1
823	1634	- 4.0	- 4.1			
802	1839	- 2.2	- 2.2			
800	1858	- 2.3	- 2.4			
778	2079	- 3.1	- 3.8			
750	2370	- 2.4	- 6.0			
716	2736	- 4.8	- 9.4			
700	2914	- 4.5	- 8.8			

Ascn #227 7 November 1969 0558 EST

P(mb)	Z(m)	T(°C)	Td(°C)	H(m)	D(°)	S(mps)
1000	108					
962	428	3.6	3.3	Sfc	280	3.6
950	529	2.6	2.4			
905	918	- 0.8	- 0.8			
900	963	- 0.7	- 0.7			
869	1243	- 0.4	- 0.4			
850	1419	- 1.5	- 1.5			
826	1646	- 3.1	- 3.1			
800	1898	- 4.6	- 4.6			
767	2229	- 6.5	- 6.5			
750	2404	- 7.5	-10.8			
733	2582	- 8.6	-16.3			
700	2938	- 9.9	-19.6			

POWER PLANT OPERATIONAL PARAMETERS

Analyses of the Keystone and Homer City coal supplies are presented in Table 11. Although two individual mine sources supplied coal to each of the generating stations, the data for each source and experiment day are averaged to obtain one analysis for each of the three series. Parameters include moisture, volatile matter, fixed carbon, ash, sulfur, and heat value. The sulfur content is a close approximation to the "as burned" basis with allowance made for rejection of sulfur-containing pyrites. The heat value of the coal is presented in English as well as metric units because of common usage.

Table 11. Coal Analyses

Keystone Station October 1967 Series	
Moisture (%)	3.19
Volatile Matter (%)	30.27
Fixed Carbon (%)	48.69
Ash (%)	15.61
Sulfur (%)	2.24
Btu per Pound	12,255
Calories per Gram	6,808

Keystone Station April 1969 Series	
Moisture (%)	3.68
Volatile Matter (%)	29.91
Fixed Carbon (%)	47.79
Ash (%)	16.50
Sulfur (%)	2.12
Btu per Pound	12,005
Calories per Gram	6,669

Keystone Station October 1969 Series	
Moisture (%)	3.53
Volatile Matter (%)	30.01
Fixed Carbon (%)	47.88
Ash (%)	16.70
Sulfur (%)	1.88
Btu per Pound	12,004
Calories per Gram	6,668

Homer City Station October 1969 Series	
Moisture (%)	3.80
Volatile Matter (%)	27.54
Fixed Carbon (%)	44.30
Ash (%)	22.11
Sulfur	2.25
Btu per Pound	11,338
Calories per Gram	6,298

Table 12 contains hourly operational data for the Keystone and Homer City Stations. Included are values of plant load, stack-gas exit temperature and velocity, temperature difference at stack top, SO_2 emission, and heat emission. The nominal period of record extends up to 2 hours before and 1 hour after helicopter or bubbler SO_2 measurements on each series day. When both stacks were emitting, a separate listing is included for each.

The plant load was obtained from the station records and includes total electrical output generated during each hour. Temperature difference at stack top is the difference between stack exit temperature and the 250-meter ambient temperature from the helicopter profile. The stack exit temperature was not monitored; instead, a correction of 13.9°C (25°F) was subtracted from the temperature of effluents leaving the air heaters.

The equations presented below permit calculation of the remaining three parameters.[15] The units of the formulas are British because all plant data were so supplied; after calculations were performed, conversion was made to metric units.

The hourly stack-gas exit velocity in feet per second was calculated from the following equation:

$$V = \frac{T_c}{3600\ A_s}\left[H_2O\left(\frac{359}{18}\right) + CO_2\left(\frac{359}{44}\right) + N_2\left(\frac{359}{28}\right) + SO_2\left(\frac{359}{64}\right) + A_e\left(\frac{359}{29}\right) \right] \frac{t_s + 460}{t_a + 460}$$

where T_c = hourly coal consumption in pounds per hour per unit.

A_s = stack area = 581.42 square feet for Keystone; 449.25 square feet for Homer City.

t_s = hourly gas temperature leaving stack in °F.

t_a = hourly ambient temperature in °F.

460 = conversion to Rankine temperature scale.

3600 = seconds per hour.

H_2O, CO_2, N_2, and SO_2 = series average in pounds per pound of coal as products of combustion.

A_e = series average excess air in pounds per pound of coal required for combustion.

Denominators in parentheses are molecular weights of respective gaseous constituents in whole grams per mole.

359 = conversion factor to British units calculated as follows:

$$\frac{22.414\ \text{liters/mole}}{28.317\ \text{liters/ft}^3} \times 453.59\ \text{g/lb} = 359\ \frac{\text{g ft}^3}{\text{lb mole}}$$

Hourly SO_2 emission from each unit in tons per hour was calculated by means of this formula:

$$SO_2 = \frac{T_c \times \%S \times 2}{2000}$$

where T_c = hourly coal consumption in pounds per hour per unit.

%S = series average percent sulfur in fuel.

2 = parts sulfur per parts oxygen in SO_2.

2000 = pounds per ton.

The final parameter, stack heat emission in British thermal units per second, was computed from the following equation:

$$Q_h = \frac{T_c}{3600} \times \% \, DG \times HV \times \frac{(t_s - t_a)}{(t_g - t_a)}$$

where T_c = hourly coal consumption in pounds per hour per unit.

% DG = hourly percent dry gas loss.

HV = series average heat value of fuel in Btu's per pound

t_s = hourly gas temperature leaving stack in °F.

t_g = hourly gas temperature leaving air heaters in °F.

t_a = hourly ambient temperature in °F.

Although hourly coal consumption is not included in this volume, it can be approximated for the Keystone Station using the ratios of 0.746 and 0.759 pound of coal per kilowatt hour generated in units #1 and #2 respectively. This amounts to 3.9×10^{-4} and 4.0×10^{-4} grams per calorie for units #1 and #2. The corresponding ratio for unit #1 at the Homer City Station is 0.808 pound of coal per kilowatt hour or 4.3×10^{-4} grams per calorie.

Table 12. PLANT OPERATIONAL DATA

Symbols

#1 or #2 : Designation of unit in operation.

Time (EST) : Hour designating preceding 60 minutes.

Load (mw) : Total hourly generation to nearest whole megawatt.

T (°C) : Stack-gas exit temperature in whole degrees Centigrade.

DT (°C) : Difference in whole degrees Centigrade between stack-gas exit temperature and ambient temperature at 250 meters above stack base elevation from helicopter profile.

Vel (mps) : Stack-gas exit velocity in meters per second to nearest tenth.

SO_2 (g/s) : Stack SO_2 emission in whole grams per second.

Cal/s x 10^6 : Stack heat emission in millions of calories per second to nearest tenth.

Table 12. PLANT OPERATIONAL DATA

Keystone #1 13 October 1967

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	860	136	129	20.3	3578	29.5
0600	890	136	129	21.0	3704	30.6
0700	860	137	130	20.4	3578	29.9
0800	880	136	129	20.8	3654	30.3
0900	880	135	128	20.8	3654	29.9
1000	900	136	128	21.1	3755	30.6
1100	880	138	129	20.8	3654	30.2
1200						
1300						
1400						
1500						
1600						
1700						

Keystone #1 16 October 1967

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	830	144	127	19.8	3452	28.1
0600	870	144	127	20.2	3629	29.4
0700	820	146	128	19.1	3427	27.9
0800	900	142	125	20.8	3755	29.9
0900	850	144	126	19.6	3553	28.5
1000	880	146	128	20.5	3654	29.9
1100	870	147	129	20.2	3629	29.8
1200						
1300						
1400						
1500						
1600						
1700						

Keystone #1 17 October 1967

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	880	143	126	20.5	3654	29.5
0600	880	143	127	20.5	3654	29.7
0700	880	141	125	20.3	3654	29.2
0800	910	145	129	21.3	3780	31.2
0900	890	145	128	20.7	3704	30.3
1000	930	147	130	21.8	3831	32.2
1100	930	148	131	21.8	3881	32.5
1200						
1300						
1400						
1500						
1600						
1700						

Keystone #1 20 October 1967

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	830	136	134	20.0	3452	29.7
0600	830	135	133	19.8	3452	29.4
0700	820	133	131	19.6	3427	28.6
0800	830	134	131	19.8	3452	29.1
0900	890	138	136	21.4	3704	32.1
1000	900	142	140	21.9	3730	33.5
1100	910	140	137	22.0	3780	33.2
1200						
1300						
1400						
1500						
1600						
1700						

Keystone #1 21 October 1967

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	440	116	108	9.8	1840	15.9
0600	440	117	109	9.9	1840	12.8
0700	490	117	109	11.0	2041	14.3
0800	470	118	110	10.5	1966	13.8
0900	460	118	111	10.4	1915	13.6
1000	468	118	111	10.6	1940	13.8
1100	480	119	111	10.8	1991	14.2
1200						
1300						
1400						
1500						
1600						
1700						

Keystone #1 22 October 1967

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	900	135	129	21.2	3755	30.9
0600	900	134	129	21.2	3755	30.8
0700	930	134	129	21.9	3881	31.8
0800	910	134	130	21.6	3780	31.6
0900	860	134	129	20.4	3578	29.6
1000	880	134	129	20.9	3654	30.2
1100	910	135	129	21.5	3780	31.3
1200						
1300						
1400						
1500						
1600						
1700						

Table 12 (continued). PLANT OPERATIONAL DATA

Keystone #1 23 October 1967

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	910	137	126	21.6	3780	30.5
0600	900	137	125	21.4	3755	30.0
0700	900	137	125	21.4	3755	30.0
0800	920	137	126	21.4	3830	30.8
0900	890	136	125	20.7	3704	29.6
1000	940	137	126	21.7	3906	31.0
1100	900	137	127	20.6	3755	29.1
1200	910	138	121	20.9	3780	29.3
1300						
1400						
1500						
1600						
1700						

Keystone #1 24 October 1967

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	870	139	129	20.4	3629	29.8
0600	870	139	128	20.4	3629	29.6
0700	860	138	127	20.1	3578	29.3
0800	880	138	126	20.6	3654	29.5
0900	850	138	126	19.9	3553	28.5
1000	880	141	129	20.6	3654	30.1
1100	870	142	129	20.4	3629	29.8
1200	850	138	123	19.5	3553	27.9
1300						
1400						
1500						
1600						
1700						

Keystone #1 26 October 1967

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	860	139	136	20.7	3578	31.2
0600	840	140	137	20.4	3503	30.6
0700	870	139	136	20.7	3629	31.6
0800	850	141	138	20.6	3553	31.0
0900	900	138	135	21.6	3755	32.4
1000	940	142	139	22.9	3906	34.8
1100	940	143	140	22.9	3906	35.1
1200						
1300						
1400						
1500						
1600						
1700						

Keystone #1 27 October 1967

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	630	120	114	14.4	2621	19.1
0600	660	117	110	14.9	2747	19.4
0700	660	117	110	14.9	2747	19.4
0800	650	119	112	14.7	2696	19.4
0900	610	118	111	13.8	2545	18.0
1000	700	119	109	15.7	2923	20.3
1100	630	121	109	14.1	2621	18.3
1200	600	122	109	13.4	2495	17.4
1300						
1400						
1500						
1600						
1700						

Keystone #1 28 October 1967

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	540	119	118	12.4	2243	16.9
0600	550	118	117	12.7	2293	17.1
0700	570	119	118	13.2	2369	17.9
0800	530	118	118	12.2	2218	16.6
0900	620	121	121	14.4	2570	20.0
1000	600	122	121	14.0	2495	19.3
1100	570	122	120	13.3	2369	18.3
1200						
1300						
1400						
1500						
1600						
1700						

Keystone #1 29 October 1967

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	610	121	118	14.1	2545	19.1
0600	600	120	117	13.8	2495	18.7
0700	590	119	116	13.5	2470	18.3
0800	580	120	118	13.4	2419	18.2
0900	630	122	120	14.7	2621	20.2
1000	590	123	120	13.7	2470	18.9
1100	590	125	121	13.7	2470	19.0
1200	600	127	122	14.0	2495	19.5
1300						
1400						
1500						
1600						
1700						

Table 12 (continued). PLANT OPERATIONAL DATA

Keystone #1 30 October 1967

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	610	124	121	14.2	2545	19.6
0600	600	124	121	14.0	2495	19.3
0700	610	123	120	14.2	2545	19.5
0800	650	124	118	14.9	2696	20.4
0900	670	128	121	15.5	2797	21.5
1000	910	141	132	21.6	3780	32.0
1100	870	139	128	20.4	3629	29.6
1200	870	148	136	20.8	3629	31.4
1300	930	146	133	22.0	3881	32.9
1400						
1500						
1600						
1700						

Keystone #1 31 October 1967

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	660	121	109	14.7	2747	19.1
0600	600	121	109	13.4	2495	17.4
0700	620	122	110	13.9	2570	18.2
0800	660	121	110	14.8	2747	19.4
0900	680	124	112	15.3	2822	20.3
1000	870	136	123	20.1	3629	28.5
1100	870	142	128	20.2	3629	29.5
1200	840	141	125	19.5	3503	28.0
1300						
1400						
1500						
1600						
1700						

Keystone #1 8 April 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	838	155	143	19.7	3200	30.3
0600	835	154	142	19.6	3200	30.0
0700	840	154	142	19.8	3226	30.1
0800	857	156	144	20.3	3276	31.2
0900	833	157	144	19.5	3175	30.3
1000	734	155	140	17.2	2797	26.0
1100	316	130	114	6.9	1210	9.1
1200	000	000	000	0.0	0000	0.0
1300						
1400						
1500						
1600						
1700						

Keystone #2 8 April 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	561	110	98	12.3	2243	14.4
0600	555	109	96	12.2	2218	14.1
0700	550	108	96	12.0	2192	13.9
0800	547	108	96	12.0	2192	13.9
0900	650	114	101	14.4	2596	17.4
1000	762	124	110	17.2	3049	22.1
1100	834	132	116	19.1	3326	25.5
1200	832	134	116	19.0	3326	25.6
1300	833	136	118	19.0	3326	25.8
1400	842	138	119	19.2	3352	26.4
1500	846	141	120	19.4	3377	26.9
1600						
1700						

Keystone #2 9 April 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	842	129	112	19.0	3352	24.8
0600	821	131	113	18.6	3251	24.4
0700	841	132	114	19.0	3352	25.2
0800	842	133	116	19.2	3352	25.6
0900	841	134	116	19.2	3352	25.7
1000	845	137	118	19.4	3352	26.2
1100	844	139	119	19.4	3352	26.4
1200	827	139	119	18.8	3276	25.8
1300	834	139	117	19.0	3326	25.2
1400	828	142	118	18.9	3301	25.7
1500	830	143	118	18.9	3301	25.8
1600						
1700						

Keystone #2 10 April 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	853	141	125	21.3	3629	30.0
0600	852	141	124	21.2	3629	29.8
0700	850	140	124	21.2	3629	29.6
0800	841	141	124	21.0	3578	29.3
0900	840	141	124	21.0	3578	29.4
1000	838	143	126	21.1	3578	29.8
1100	837	144	128	21.0	3578	29.6
1200	837	144	128	21.0	3578	30.2
1300	827	145	129	20.9	3528	30.1
1400	669	137	121	16.6	2848	22.9
1500	91	89	74	2.0	378	1.9
1600						
1700						

Table 12 (continued). PLANT OPERATIONAL DATA

Keystone #1 11 April 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s $x10^6$
0400						
0500	741	156	151	18.3	2898	28.8
0600	743	157	152	18.4	2898	28.9
0700	744	157	153	18.4	2898	29.2
0800	735	157	153	18.2	2873	28.8
0900	751	159	155	18.7	2923	29.8
1000	751	160	156	18.7	2923	30.0
1100	748	162	157	18.6	2923	30.0
1200	752	162	156	18.7	2923	30.0
1300	748	163	156	18.5	2923	29.9
1400	745	164	156	18.4	2898	29.8
1500						
1600						
1700						

Keystone #1 12 April 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s $x10^6$
0400						
0500	849	153	151	21.5	3402	33.8
0600	856	153	151	21.7	3427	34.0
0700	851	154	152	21.6	3402	34.1
0800	851	156	154	21.7	3402	34.4
0900	851	158	155	21.7	3402	34.7
1000	857	163	158	22.0	3427	35.6
1100	916	166	158	23.3	3654	38.1
1200	908	164	156	23.0	3629	37.2
1300	868	163	152	21.9	3478	34.8
1400	855	164	152	21.4	3427	34.3
1500	854	165	152	21.2	3402	34.3
1600						
1700						

Keystone #1 14 April 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s $x10^6$
0400						
0500	858	161	148	20.9	3352	32.8
0600	853	161	148	20.8	3326	32.6
0700	852	161	148	20.8	3326	32.6
0800	849	162	151	20.8	3326	32.9
0900	844	164	154	20.7	3301	33.1
1000	848	166	152	20.8	3326	33.2
1100	921	172	157	22.8	3604	37.3
1200	895	172	156	22.1	3503	35.9
1300	591	155	138	13.9	2318	21.0
1400						
1500						
1600						
1700						

Keystone #1 15 April 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s $x10^6$
0400						
0500	855	157	144	21.2	3427	32.6
0600	852	154	142	21.0	3402	32.0
0700	860	157	144	21.3	3452	32.8
0800	859	159	148	21.4	3452	33.6
0900	852	165	155	21.5	3402	34.8
1000						
1100						
1200						
1300						
1400						
1500						
1600						
1700						

Keystone #1 17 April 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s $x10^6$
0400						
0500	856	162	145	21.0	3402	32.7
0600	855	163	146	20.9	3402	32.9
0700	859	162	145	21.0	3427	32.9
0800	856	163	146	21.0	3402	32.9
0900	854	165	147	21.0	3402	33.1
1000	882	170	151	21.9	3503	35.0
1100	910	174	154	22.6	3629	36.7
1200	892	174	152	22.1	3553	35.6
1300	856	174	151	21.3	3402	34.0
1400	852	174	151	20.8	3402	33.8
1500						
1600						
1700						

Keystone #1 18 April 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s $x10^6$
0400						
0500	849	169	150	20.8	3377	33.3
0600	849	170	151	20.8	3377	33.5
0700	855	171	152	21.1	3377	33.9
0800	859	171	152	21.2	3402	34.1
0900	858	171	152	21.2	3402	34.1
1000	894	174	155	22.1	3553	36.2
1100						
1200						
1300						
1400						
1500						
1600						
1700						

Table 12 (continued). PLANT OPERATIONAL DATA

Keystone #2 28 April 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	845	142	121	19.2	3326	26.5
0600	850	142	121	19.0	3352	26.9
0700	850	143	123	19.4	3352	27.2
0800	850	142	125	19.6	3352	27.4
0900	866	143	128	20.1	3402	28.7
1000	908	147	131	21.3	3578	31.0
1100	897	147	133	21.1	3528	31.0
1200	846	145	131	19.7	3326	28.8
1300						
1400						
1500						
1600						
1700						

Keystone #1 30 April 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400	740	148	143	17.9	2873	27.2
0500	778	151	146	18.9	3024	29.1
0600	862	154	150	21.1	3352	33.1
0700	859	156	152	21.2	3326	33.3
0800	863	157	154	21.2	3352	33.8
0900	892	161	157	22.1	3452	35.6
1000	910	163	157	22.6	3528	36.5
1100	886	164	156	21.9	3427	35.3
1200	858	163	154	21.0	3326	33.7
1300						
1400						
1500						
1600						
1700						

Keystone #2 30 April 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400	529	107	102	11.5	2066	13.3
0500	660	116	111	15.2	2570	18.9
0600	846	126	121	19.4	3276	26.4
0700	846	127	123	19.4	3276	26.8
0800	849	128	125	19.6	3301	27.2
0900	874	133	128	20.3	3402	28.6
1000	905	136	129	21.0	3503	29.9
1100	871	135	126	20.1	3377	28.2
1200	840	134	124	19.3	3251	26.8
1300						
1400						
1500						
1600						
1700						

Keystone #1 1 May 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400	858	163	155	22.2	3503	35.7
0500	859	163	156	22.2	3503	35.9
0600	858	163	156	22.2	3503	35.8
0700	857	161	155	22.1	3478	35.4
0800	855	161	154	22.1	3478	35.2
0900	869	166	157	22.6	3528	36.4
1000	912	171	160	23.7	3704	39.1
1100	891	172	159	23.2	3629	38.0
1200	849	172	157	21.9	3452	35.8
1300	855	172	157	21.8	3478	36.0
1400	855	173	157	21.8	3478	36.0
1500						
1600						
1700						

Keystone #2 1 May 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400	796	131	124	18.3	3100	25.3
0500	849	134	127	19.6	3301	27.8
0600	856	135	128	19.9	3326	28.1
0700	862	131	124	19.8	3352	27.4
0800	857	132	125	19.7	3326	27.4
0900	864	136	127	20.0	3377	28.3
1000	915	142	130	21.3	3553	30.7
1100	892	142	129	20.6	3478	29.6
1200	857	141	126	19.7	3326	27.8
1300	853	142	126	19.4	3326	27.6
1400	848	142	126	19.3	3301	27.5
1500						
1600						
1700						

Keystone #1 2 May 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400	846	155	142	20.5	3352	31.4
0500	858	156	143	20.8	3402	32.1
0600	856	156	143	20.8	3377	32.0
0700	850	155	142	20.6	3352	31.6
0800	853	158	146	20.8	3377	32.9
0900	904	164	151	22.4	3578	35.6
1000	930	169	155	23.2	3679	37.6
1100	926	173	157	22.9	3654	37.7
1200	863	171	154	21.2	3402	34.5
1300	854	172	153	20.9	3377	34.0
1400	851	171	152	20.8	3352	33.7
1500						
1600						
1700						

Table 12 (continued). PLANT OPERATIONAL DATA

Keystone #2 2 May 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400	852	127	114	18.8	3276	24.9
0500	852	128	115	19.0	3276	24.8
0600	852	128	115	18.8	3276	24.8
0700	850	127	115	18.7	3276	24.7
0800	849	130	118	18.8	3251	25.3
0900	886	136	123	19.9	3402	27.5
1000	911	141	126	20.6	3503	29.1
1100	882	142	125	19.8	3377	28.0
1200	849	142	124	18.9	3251	26.7
1300	843	143	124	18.8	3226	26.6
1400	843	144	124	18.7	3226	26.6
1500						
1600						
1700						

Keystone #1 3 May 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400	855	161	144	21.4	3503	33.3
0500	858	156	139	21.3	3528	32.2
0600	863	158	140	21.5	3553	32.8
0700	858	156	139	21.4	3528	32.4
0800	851	157	139	21.2	3503	32.1
0900	843	159	140	21.0	3452	31.9
1000	842	162	141	21.2	3452	32.3
1100	843	163	141	21.2	3452	32.3
1200	850	166	143	21.0	3478	32.9
1300	853	167	143	21.1	3503	33.0
1400						
1500						
1600						
1700						

Keystone #2 3 May 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400	854	133	116	19.2	3352	25.6
0500	853	134	116	18.9	3352	25.8
0600	761	129	112	17.0	2974	22.0
0700	736	127	110	16.2	2873	21.0
0800	740	129	111	16.3	2898	21.2
0900	745	131	112	16.5	2923	21.6
1000	729	134	113	16.2	2898	21.4
1100	733	137	115	16.3	2873	21.9
1200	724	138	115	16.0	2848	21.6
1300	727	139	115	16.1	2848	21.7
1400						
1500						
1600						
1700						

Keystone #1 5 May 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400	856	164	151	22.5	3578	35.8
0500	857	164	152	22.5	3604	35.9
0600	855	165	155	22.5	3578	36.0
0700	857	166	154	22.6	3604	36.3
0800	848	164	150	22.1	3553	35.2
0900	854	165	149	22.3	3578	34.8
1000	906	169	151	23.7	3805	37.8
1100	907	170	149	23.7	3805	37.9
1200	869	169	150	22.5	3654	36.0
1300	861	169	149	22.3	3604	35.6
1400						
1500						
1600						
1700						

Keystone #2 5 May 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400	856	142	129	20.1	3402	28.9
0500	855	142	129	20.1	3402	29.0
0600	857	143	130	20.2	3402	29.1
0700	851	143	130	20.2	3377	29.1
0800	843	142	128	19.7	3352	28.2
0900	870	143	128	20.4	3452	29.1
1000	902	146	128	21.1	3578	30.3
1100	891	147	128	20.8	3528	29.8
1200	851	146	126	19.8	3377	27.6
1300	849	147	126	19.8	3377	28.1
1400						
1500						
1600						
1700						

Keystone #1 6 May 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400	855	161	151	21.9	3503	34.8
0500	854	161	151	21.9	3503	34.7
0600	850	160	150	21.8	3478	34.4
0700	849	161	146	21.5	3478	33.5
0800	853	162	152	21.7	3503	34.1
0900	878	165	149	22.4	3604	35.4
1000	919	169	151	23.4	3755	37.4
1100	918	172	152	23.4	3755	37.7
1200	845	170	149	21.4	3452	34.0
1300	851	171	149	21.4	3478	34.2
1400	855	171	149	21.4	3503	34.4
1500						
1600						
1700						

Table 12 (continued). PLANT OPERATIONAL DATA

Keystone #2 6 May 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO$_2$ (g/s)	Cal/s x10^6
0400	850	140	130	19.9	3326	28.5
0500	853	141	130	20.0	3352	28.8
0600	856	141	130	20.0	3352	28.8
0700	859	142	128	19.8	3352	28.4
0800	846	142	128	19.5	3301	27.9
0900	867	143	128	20.0	3402	28.6
1000	915	149	131	21.3	3578	31.0
1100	910	151	131	21.2	3553	30.8
1200	835	148	127	19.1	3326	27.5
1300	850	149	128	19.5	3326	28.0
1400	850	150	128	19.4	3326	28.1
1500						
1600						
1700						

Keystone #1 7 May 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO$_2$ (g/s)	Cal/s x10^6
0400	851	152	129	21.0	3553	30.4
0500	841	153	131	20.8	3528	30.4
0600	851	153	131	21.0	3553	30.8
0700	865	156	137	21.8	3629	32.8
0800	864	157	138	21.8	3604	33.0
0900	869	159	140	22.0	3604	33.5
1000	912	166	145	23.3	3629	36.5
1100	913	167	144	23.3	3805	36.5
1200	847	163	139	21.3	3830	32.6
1300	845	164	139	21.1	3528	32.5
1400	847	165	139	21.1	3553	32.6
1500						
1600						
1700						

Keystone #2 7 May 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO$_2$ (g/s)	Cal/s x10^6
0400	704	126	104	15.6	2822	19.3
0500	707	127	104	15.7	2848	19.6
0600	709	127	104	15.7	2848	19.6
0700	708	127	109	15.9	2848	20.4
0800	715	128	109	16.1	2873	20.7
0900	706	130	111	16.0	2848	23.6
1000	707	132	111	16.1	2848	20.8
1100	700	133	110	15.8	2822	20.5
1200	688	133	109	15.5	2772	19.9
1300	682	134	109	15.3	2747	19.7
1400	698	136	110	15.6	2797	20.4
1500						
1600						
1700						

Keystone #1 8 May 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO$_2$ (g/s)	Cal/s x10^6
0400	756	155	134	19.0	3175	28.2
0500	849	160	139	21.5	3578	32.8
0600	853	161	140	21.8	3578	33.1
0700	852	161	141	21.7	3578	33.3
0800	853	162	143	21.9	3578	33.9
0900	852	163	144	21.9	3578	34.2
1000	826	164	145	21.4	3478	34.5
1100	803	166	146	20.8	3377	32.8
1200	704	162	144	18.1	2974	28.1
1300	690	162	144	17.7	2898	27.6
1400						
1500						
1600						
1700						

Keystone #2 8 May 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO$_2$ (g/s)	Cal/s x10^6
0400	630	128	107	14.1	2545	17.9
0500	628	128	107	14.1	2520	17.9
0600	724	133	113	16.5	2923	21.6
0700	830	139	120	19.3	3326	26.4
0800	831	141	121	19.4	3352	26.8
0900	850	142	123	19.9	3427	27.9
1000	886	148	129	21.4	3553	30.4
1100	882	149	130	21.1	3528	30.5
1200	827	147	129	19.6	3326	28.4
1300	826	148	130	19.8	3326	28.6
1400						
1500						
1600						
1700						

Keystone #1 9 May 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO$_2$ (g/s)	Cal/s x10^6
0400						
0500						
0600	642	145	130	15.5	2596	22.4
0700	644	145	130	15.5	2621	22.5
0800	646	146	131	15.7	2621	22.8
0900	631	147	132	15.4	2570	22.1
1000	638	151	136	15.6	2596	23.3
1100	629	153	139	15.5	2545	23.4
1200	642	155	140	15.9	2596	24.2
1300	651	157	143	16.2	2646	24.9
1400	643	158	143	16.1	2621	24.7
1500						
1600						
1700						

Table 12 (continued). PLANT OPERATIONAL DATA

Keystone #2 9 May 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500						
0600	854	135	120	19.8	3402	27.0
0700	853	134	120	19.8	3402	26.8
0800	851	135	120	19.7	3377	26.9
0900	873	138	124	20.4	3478	28.3
1000	912	144	129	21.5	3629	31.0
1100	897	146	131	21.3	3553	30.9
1200	843	144	130	19.9	3352	28.7
1300	850	146	131	20.2	3377	29.3
1400	849	147	132	20.2	3377	29.4
1500						
1600						
1700						

Keystone #2 9 October 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	458	106	90	10.3	1635	11.1
0600	439	108	92	9.9	1567	11.3
0700	421	108	93	9.5	1504	10.8
0800	410	110	95	9.3	1465	10.8
0900	419	111	95	9.5	1497	11.1
1000	438	111	94	9.9	1565	11.5
1100	430	112	95	9.8	1535	11.3
1200	427	112	94	9.7	1525	11.2
1300	427	112	94	9.7	1525	11.2
1400	424	113	94	9.6	1517	11.2
1500						
1600						
1700						

Keystone #2 10 October 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	747	127	110	18.0	2730	23.4
0600	759	129	112	18.4	2772	24.8
0700	799	133	116	19.6	2918	26.4
0800	797	135	119	19.7	2911	26.9
0900	799	132	115	19.7	2918	26.1
1000	795	133	114	19.4	2903	25.9
1100	799	133	113	19.4	2918	25.8
1200	793	129	109	19.1	2895	24.7
1300	747	127	106	17.8	2730	22.5
1400	729	126	104	17.3	2663	21.7
1500						
1600						
1700						

Homer City #1 11 October 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	401	116	97	12.5	1890	11.7
0600	396	114	96	12.3	1865	11.4
0700	397	115	96	12.4	1865	11.5
0800	405	116	97	12.6	1915	11.8
0900	364	111	91	11.2	1714	9.9
1000	311	103	82	9.3	1462	7.7
1100	303	102	81	9.0	1436	7.3
1200	291	101	79	8.6	1361	6.8
1300	304	102	79	9.0	1436	7.1
1400	377	112	88	11.4	1764	9.9
1500						
1600						
1700						

Homer City #1 13 October 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	490	128	106	16.4	2419	14.5
0600	491	128	106	16.4	2419	14.5
0700	489	128	106	16.3	2419	14.4
0800	486	127	105	16.2	2394	14.3
0900	490	128	106	16.3	2419	14.4
1000	528	133	110	17.8	2596	16.2
1100	540	135	110	18.2	2671	16.7
1200	536	134	108	18.0	2646	16.2
1300	534	134	108	17.9	2646	16.0
1400	530	133	106	17.7	2621	15.7
1500						
1600						
1700						

Homer City #1 15 October 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500						
0600	321	104	97	10.2	1512	9.4
0700	320	104	97	10.1	1512	9.4
0800	324	105	98	10.3	1537	9.6
0900	323	105	97	10.2	1537	10.0
1000	322	104	96	10.1	1512	9.3
1100	330	106	96	10.4	1562	10.1
1200	326	105	94	10.2	1537	9.2
1300	332	106	93	10.4	1562	9.3
1400	342	107	94	10.7	1613	9.7
1500						
1600						
1700						

Table 12 (continued). PLANT OPERATIONAL DATA

Homer City #1 17 October 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500						
0600						
0700						
0800	420	118	111	12.9	1840	13.1
0900	426	119	111	13.0	1865	13.3
1000	475	126	118	14.8	2092	15.8
1100	543	136	129	17.4	2394	19.6
1200	610	145	138	20.0	2696	23.7
1300	613	146	139	20.1	2696	23.9
1400	600	143	136	19.6	2646	23.0
1500	605	144	137	19.8	2671	23.6
1600						
1700						

Homer City #1 18 October 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	550	136	133	20.2	2747	23.2
0600	536	134	130	19.6	2671	22.2
0700	532	134	130	19.4	2646	22.1
0800	545	136	131	19.9	2722	22.7
0900	555	137	131	20.2	2772	23.1
1000	556	137	130	20.2	2772	23.0
1100	556	137	129	20.1	2772	22.9
1200	552	136	127	19.9	2747	22.3
1300	553	137	126	19.8	2747	22.2
1400	559	138	127	20.1	2772	22.6
1500						
1600						
1700						

Homer City #1 20 October 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	430	119	102	12.8	1915	12.4
0600	442	121	104	13.2	1966	12.9
0700	502	129	112	13.7	2218	12.9
0800	559	138	120	17.4	2470	17.0
0900	561	138	120	17.5	2495	20.5
1000	555	137	119	17.2	2444	18.6
1100	562	138	118	17.4	2495	18.8
1200	559	138	117	17.2	2470	18.5
1300	566	138	117	17.4	2495	18.7
1400	568	139	117	17.5	2520	18.7
1500	568	139	116	17.4	2520	18.7
1600						
1700						

Homer City #1 21 October 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	446	122	111	13.9	2016	14.3
0600	512	131	121	16.4	2268	22.4
0700	573	139	129	18.7	2570	21.3
0800	576	140	130	18.8	2596	21.5
0900	577	140	130	18.9	2596	21.4
1000	574	139	129	18.7	2570	21.2
1100	575	139	129	18.7	2596	21.3
1200	516	131	120	16.4	2318	17.8
1300	576	140	129	18.7	2596	21.3
1400	577	140	128	18.7	2596	21.2
1500						
1600						
1700						

Homer City #1 24 October 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500	441	121	121	14.0	1789	13.9
0600	423	119	119	12.3	1714	13.1
0700	423	119	119	12.3	1714	13.1
0800	424	119	119	12.3	1739	13.1
0900	423	119	118	12.3	1714	13.0
1000	420	118	116	12.1	1714	12.7
1100	419	118	115	12.0	1714	12.5
1200	425	119	114	12.2	1739	12.6
1300	419	118	112	11.9	1714	12.2
1400						
1500						
1600						
1700						

Keystone #2 28 October 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500						
0600	791	106	103	18.9	2873	23.1
0700	797	113	110	19.4	2998	24.8
0800	798	117	114	19.6	2998	25.8
0900	801	114	112	19.6	2998	25.4
1000	769	116	113	18.8	2797	24.5
1100	756	117	112	18.4	2747	24.0
1200	751	117	111	18.2	2722	23.6
1300	754	116	109	18.2	2747	23.2
1400	754	116	108	18.2	2747	23.1
1500	752	116	108	18.1	2722	22.9
1600						
1700						

Table 12 (continued). PLANT OPERATIONAL DATA

Keystone #2 29 October 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500						
0600	758	98	96	18.1	2797	21.1
0700	787	107	106	19.3	2898	24.0
0800	794	112	111	19.8	2923	25.6
0900	804	113	113	20.1	2974	26.1
1000	804	115	113	20.0	2974	26.1
1100	805	117	113	20.0	2974	26.1
1200	805	118	112	20.0	2974	26.0
1300	805	119	112	19.9	2974	26.0
1400	805	119	111	19.9	2974	25.7
1500	805	118	110	19.8	2974	25.5
1600						
1700						

Keystone #2 30 October 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500						
0600	781	105	100	19.8	3049	23.6
0700	575	111	106	14.8	2243	18.4
0800	000	000	000	0.0	0000	0.0
0900	000	000	000	0.0	0000	0.0
1000						
1100						
1200						
1300						
1400						
1500						
1600						
1700						

Keystone #2 31 October 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500						
0600	806	104	95	18.8	2948	21.9
0700	800	107	98	18.8	2923	22.3
0800	794	111	102	18.9	2898	22.8
0900	797	114	104	19.0	2898	23.5
1000	798	117	105	19.1	2898	23.8
1100	801	118	105	19.1	2923	23.8
1200	796	119	104	18.9	2898	23.6
1300	796	119	104	18.9	2898	23.4
1400	797	120	103	18.8	2898	23.4
1500						
1600						
1700						

Keystone #2 1 November 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500						
0600						
0700	804	118	105	19.1	2923	23.8
0800	804	118	105	19.1	2923	23.8
0900	798	119	106	19.0	2898	23.9
1000	802	119	106	19.1	2898	24.1
1100	797	119	106	19.0	2898	24.0
1200						
1300						
1400						
1500						
1600						
1700						

Homer City #1 6 November 1969

Time EST	Load (mw)	T (°C)	DT (°C)	Vel (mps)	SO_2 (g/s)	Cal/s x10^6
0400						
0500						
0600	477	126	120	15.3	2142	20.7
0700	476	126	120	15.2	2142	16.4
0800	475	126	120	15.2	2142	16.4
0900	476	126	122	15.3	2142	16.6
1000	479	127	121	15.4	2142	16.7
1100	474	126	120	15.1	2117	16.3
1200	474	126	119	15.1	2117	16.2
1300	477	126	119	15.2	2142	16.3
1400	478	127	119	15.2	2142	16.3
1500	475	126	118	15.1	2142	16.0
1600						
1700						

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The conduct of LAPPES is continuously monitored by an advisory committee composed of J. Fuquay, D. Pack, R. McCormick, F. Gartrell, M. Smith, H. Panofsky, and D. Lohman. This committee meets twice yearly to review current progress and to suggest future activities.

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